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ABSTRACT

This study was undertaken for the purpose of seeing how a health counseling program for overweight girls could be developed in a secondary high school setting. The study first reviews the health literature on obesity, surveys school nurse-teacher health counseling programs, and investigates relaxed community characteristics. The report on a six-month pilot health counseling program follows. It included a careful selection of 16 overweight girls and a control group. Nutritional education, retraining of eating habits, stimulation of diverse interests, and encouragement of physical activity formed the nucleus of the counseling sessions. The results of the study showed an overall weight loss of 224 pounds among the 16 counseled girls in contrast to a weight increase of the 16 pounds among the 16 uncounseled group. An improvement in personal appearance, attitudinal realism about the weight problem, along with self-acceptance, were changes evident with the counseled group. The study shows that a thoroughly informed school nurse-teacher is in a strategic position to offer her expertise in assisting the student with a weight problem. (Author)

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HEALTH COUNSELING FOR THE OVERWEIGHT ADOLESCENT GIRL

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A Thesis Submitted in Partial Fulfillment of
The Requirements for the Degree of
Doctor of Philosophy

Walden University
August, 1972

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Author - Elizabeth J. Handley

Title - Health Counseling For the Overweight Adolescent Girl

This study was undertaken for the purpose of seeing how a health counseling program for overweight adolescent girls could be developed in a secondary high school setting. Initially, the study developed out of an awareness and concern for the problem of obesity among teenage girls.

The study reviewed the health literature on obesity, surveyed school nurse-teacher health counseling programs and investigated related community characteristics. A six-month pilot health counseling program ensued.

The program included a careful selection of sixteen overweight girls and a control group. Nutritional education, retraining of eating habits, stimulation of diverse interest and encouragement of physical activity formed the nucleus of the counseling sessions.

The results of the six-month pilot study showed an overall weight loss of 224 pounds among the sixteen counseled girls as contrasted to a weight increase of 76 pounds among the sixteen uncounseled group. An improvement in personal appearance, attitudinal realism about the weight problem, along with self-acceptance, were changes evident with the counseled group.

The study shows that a thoroughly informed school nurse-teacher by means of detailed planning and program execution is in a strategic position to offer her expertise in assisting the student with a weight problem.

If additional studies beyond this pilot study bear out the results of this study, then adequately prepared health counseling programs can serve as a means of prevention and control of the problem of overweight among the high school students.

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Chapter 1

INTRODUCTION

Obesity is recognized as a major health problem today. The increasing prevalence of overweight people in the nation has stimulated serious concern among health specialists. Every age group ranging from infancy to the aged is confronted with the problem of too much body fat content. The multiple complexities involved in the whole spectrum of obesity have been a deterrent in developing an effective solution. The need for intensive research is great in all age categories, particularly during the adolescent years.

OBESITY IN ADOLESCENT GIRLS

Results of various obesity studies conducted show that obesity is a common medical problem among adolescents. Approximately one half of these obese teenagers develop their obesity during the time of puberty. Follow-up studies have indicated that when obesity remains unchecked, the problem becomes more severe and more difficult to correct. Therefore, because of the shorter duration of the problem, a program for weight reduction appears to be most optimistic during these early adolescent years.[1]

Additional obesity studies recently conducted on schoolage children in various sections of the country indicated the proportion of girls

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[1]S. L. Hammar, M.C., "Adolescent Obesity," Nutrition News, 27:3 (October, 1964), 1.

who were overweight was much higher than the corresponding proportion of boys.[2]

Personal observations and direct contact with adolescents over the past twelve years in this investigator's position as a school nurse-teacher in a secondary high school have strongly indicated the adverse effects overweight can have on the physical, emotional and educational status of the adolescent, especially the teenage girl. The overweight adolescent girl becomes more deeply engrossed, more frustrated and more self conscious in her weight dilemma than the adolescent boy. As a result, she frequently falls easy prey to quackery, food faddisms and all the unscientific quick roads to weight reduction. As a potential mother, her nutritional requirements need to be carefully safeguarded. Nutritional factors also affect expectant mothers, even though expectant mothers are not commonly a widespread school health problem.

Several studies done on infant growth have strongly emphasized the importance of the right kind of food during the crucial formative period of fetal development. The fact that the infant at birth is nutritionally nine months old is valid evidence for special dietary consideration of the expectant mother. Since the fetal organism is living in union with the mother and is dependent upon her for physiological development, the need for proper nutrition becomes vital.[3]

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[2]Samuel M. Fox III, M.D. (ed.), Obesity and Health, Public Health Service Publication No. 1185 (Arlington, Virginia: U.S. Department of Health, Education and Welfare, 1966), pp. 19-20.

[3]Icie G. Macy, Ph.D., Sc.D., "Nutrition of Teenage Girls and Motherhood," Nutrition News, 18:4 (April, 1955), 1.

Along with good nutrition, weight control becomes especially important during pregnancy. Medical reports have shown that expectant mothers who are overweight are more prone to develop eclampsia, a serious metabolic disease characterized by increased blood pressure and elevated temperature.[4] Medical studies have further emphasized that many of the complications occurring with obesity may be avoided by weight regulation through proper nutritional intake, adequate rest, and exercise.[5] In general, beneficial results may be obtained through the establishment of a healthy, wholesome pattern of living.

An important need for emphasis of such a life style is evident during the early adolescent years. This writer's experience over the past twelve years with the overweight adolescent girl has revealed a discouragingly, repetitious pattern. On entrance to high school, the girl is already overweight. Her desire for acceptance, recognition, dating becomes paramount. She thinks she is not popular because she is fat. She is ridiculed by her peers. She tends to become more self-conscious, more withdrawn, which leads to an attitude of hopelessness. This attitude drives her to eat more and more. In food she finds consolation. She begins to manifest physiolcgical symptoms, i.e. headache, stomach cramps. She uses these symptoms to get out of gym classes, because she can't stand to let others see her in a gym suit. The symptoms become chronic. She soon begins to skip other classes, and finally a pattern of frequent absences from school develops. She turns to more and more food consumption.

Somewhere along the way she may attempt the much advertised crash

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[4]W. W. Bauer, M.D. (ed.), Today's Health Guide (Chicago: American Medical Association, 1965), p. 21.

[5]Ibid., pp. 143-45.

diet, a quick-way-to-lose-weight regime or try over-the-counter reducing pills. The results are disappointing and often disastrous. Parental pressure may force her to go to a doctor. Usually a diet and possibly medication are prescribed. A close, continuous follow-up is frequently not possible. The doctor generally doesn't have the time required for needed counseling, and the cost would often be prohibitive for many families. The frustration mounts, and the vicious circle continues.

Dr. Jean Mayer, a distinguished nutritionist, concisely depicts this vicious circle pattern as shown in the schematic diagram on the next page. The obese girl leaves high school and often finds rejection in employment, sometimes in college admissions and in her social contacts. She is all too frequently doomed to an existence of unhappiness.

The need for continuous counseling and guidance for the adolescent with a weight problem warrants a high priority position. Since adolescents spend a significant proportion of their time in schools and school related activities, schools as educational institutions have a major responsibility for meeting the important health requirement of the young people whom they serve.

School health programs and school personnel having special responsibility for the school health activities are in a strategically unique position. Not only can school health personnel assist in identifying individual student health problems, they can exercise initiative in developing and maintaining programs to provide increasingly adequate school health services. Within this context, the school nurse-teacher as one member of the school health team has an opportune position for appraising the health status of the students and identifying the student with a weight problem. Her expertise can very well be applied to a meaningful on-going counseling and guidance program for these overweight young people.

Obesity In Adolescence A Vicious Circle

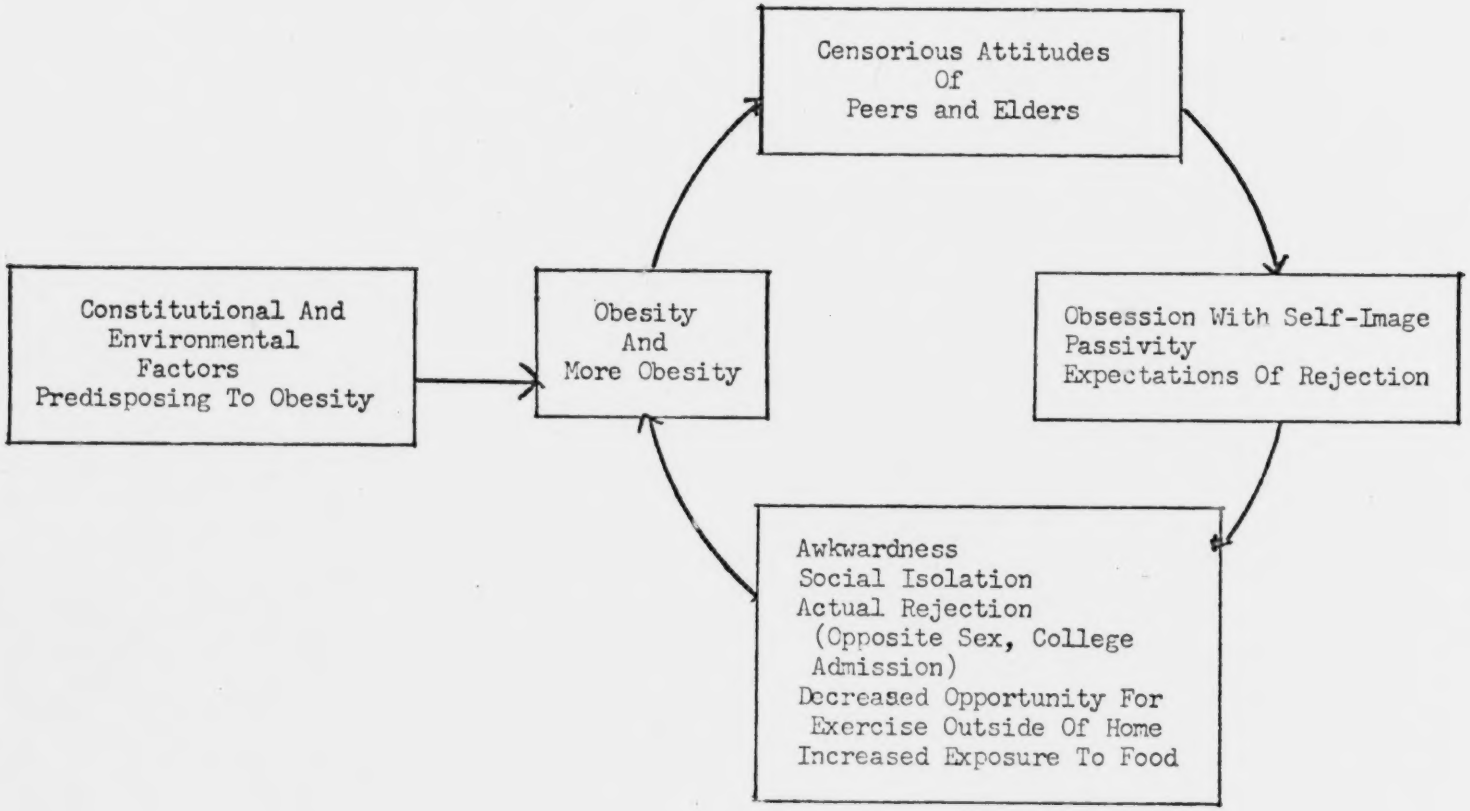

Figure 1

Schematic representation of the factors affecting obesity in adolescence

Jean Mayer, Overweight: Causes, Cost, and Control (c) 1968.
By Permission Of Prentice-Hall, Inc.

STATEMENT OF THE PROBLEM AND HYPOTHESIS

Recognition of health counseling and guidance as a much needed service for the overweight adolescent girl in the secondary school led to the identification of the problem and task undertaken in this study. For the school nurse-teacher aware of the need for this health counseling service the problem is how to develop a school program of health counseling for overweight adolescent girls. To create such a program an initial step is a preliminary investigation of possibilities, the task undertaken in this study: a pilot study in the development and assessment of the effectiveness of an individualized health counseling program for selected adolescent girls in a secondary school.

Briefly, the health counseling program involved working with sixteen overweight girls attending individual weekly counseling sessions and monthly group sessions.

The extent of overweight of each girl was ascertained during her initial session and a realistic weight loss goal was projected. The individual's weight was recorded each week.

Provisions for weight loss were developed through nutritional education, physical activity and diverse interest guidelines. Utilization of individualized informational data and appropriate literature were incorporated. A prime focus emphasized appearance with a basic objective of establishing healthy, wholesome habits for everyday living. The primary overall concern was a consistent empathic approach employing social reinforcement and supportive reassurance as exemplified by the expressed needs of each overweight girl.

Included in this pilot study was a control group consisting of sixteen girls ranging in age from 14 to 18 selected from the same high

school student population. The control group and the experimental group each contained five freshmen, five sophomores, three juniors and three seniors. Since the study is of the pilot variety, a general control group was used rather than a group individually matched with members of the experimental group. The control group girls were twenty or more pounds overweight as were the sixteen girls who were selected for the health counseling program for the overweight girl.

The girls in the control group were weighed at the beginning of the six-month pilot study and again at the end of the six-month period. They did not receive health counseling for weight control during that period. A comparative analysis of the weights of the control group and that of the counseled group is discussed in the final chapter. In brief, it was the hypothesis of this inquiry that a health counseling program with the features outlined above--nutritional education, physical fitness, diverse activity accompanied with consistent empathic support--would result in the reduction of obesity for the selected adolescent girls in the school.

Much of the content of this study deals with a different kind of individualized approach to health counseling, one based upon the expressed needs of each overweight adolescent girl selected for this pilot study. A limited unstructured health counseling approach was initiated through a nurse health counseling program with four overweight girls. The encouraging results stimulated the development of a broader, intensive program. In preparation for the in-school study, a survey of recent research was undertaken on the obesity problem. The results of the general survey are reported in Chapters 2 and 3 as background information for the school nurse-teacher interested in the obesity problem at the local school level.

The planning, implementation and results of a six-month on-going health counseling program for the overweight adolescent girl are described in detail in Chapters 4, 5, and 6. Chapter 4 deals with the preliminaries considered helpful for developing a health counseling program. The design and techniques employed in the actual counseling sessions are discussed in Chapter 5. The concluding Chapter 6, describes the results of a six-month study. Also included in this final chapter are some implications for expanded programs which would encompass all school-age people with a weight problem. Counseling philosophy and techniques are aimed at assisting the overweight girl in developing a healthy wholesome pattern of living, starting with empathic retraining of basic food patterns. Emphasis throughout is on supportive reassurance and social reinforcement.

After the preliminary investigation of the problem of overweight in the writer's particular school, and the decision to develop a health counseling program, an additional step was to find out what type of weight control program, if any, existed in other schools. Since the site of the study was a secondary school in a particular region and within a particular regional association, the schools selected were the twenty-one secondary schools included in the Health Services Association of the North Nassau County Zone on Long Island. These schools are all outside of the Central New York Metropolitan Area. A direct telephone interview with the school nurse-teacher in charge of the Health Services in the different schools was the method used in the survey.

Since any school health program exists in a community context, some study of the community was undertaken to provide more specific knowledge of this context. The information came from two sources. The first was personal experience based on residence, teaching, automobile

travel, visits, and participation in community group meetings.

A recent report of the faculty committee on the Community and School study of secondary school evaluation of North Shore High School provided the second major source of information.

In the study no attempt was made beyond the regional delimitation for the school survey and the general community study to identify possible significant community factors having import for the development of a health counseling program. Aside from the general survey to develop a background framework for the understanding of obesity, the study is thus an internal study for which data could be accumulated primarily from school records and sources immediately available to a school nurse-teacher.

In order to have a broader understanding of some of the nutritional problems involved in obesity, a questionnaire was utilized to ascertain the nutritional health patterns and knowledge of a sample of 105 girls attending North Shore High School. The questionnaire was initially pretested on twenty-two girls in a mixed age physical education class.

The sample of the 105 girls was made possible through the cooperation of the Home Economics Department. The initial reason for selecting the Home Economics Department was that the classes were primarily female. These girls ranged in age from 14 to 18. They were enrolled in a variety of courses which comprise the Home Economics curriculum.

Data obtained from the cumulative Health Records identified the overweight girls. Overweight was determined by a comparative analysis of the weight information recorded on the cumulative Health Record and a corresponding standard weight-height-age table. This table was prepared by Bird T. Baldwin and Thomas D. Wood and approved by the American Child Health Association.

The sixteen girls selected to participate in the program were twenty pounds or more over the standard height and weight according to their ages. Only those students who had no known physical or psychological problems other than excess weight were selected. Final approval for each girl to participate in the program was determined by the school physician.

In order to develop and implement an effective health counseling program for the overweight adolescent, it was necessary to do intensive research in the whole area of studies of obesity. Several concerns guided the subsequent general investigation: an interest (1) in learning about the extent of the problem in the United States today, (2) in the relationship of obesity to specific diseases and mortality rate, (3) in the preventive and treatment measures and the etiology of obesity, (4) in the degree of influence dietary fads, quackery, private health clubs and reducing salons had on the overweight population.

The first phase of the general research involved a review of selected sources concerned with collecting statistical data on the prevalence of obesity. This was followed by an analytical survey of the studies of the relationship of obesity to mental and physical health. An investigation was also conducted on reports of the influences of food faddisms and quackery on the overweight population.

A historical analysis was done on studies of causative factors of obesity. Similarly, an analysis of selected studies on adolescent obesity and studies on the treatment and prevention of obesity was undertaken. As mentioned earlier, the elements of these reviews are reported in Chapters 2 and 3. In addition to the account of the planning and results of the pilot study, Chapters 5 and 6 include evaluative analyses,

interpretations and suggested implications for prevention and control of obesity.

In this study, the terms "obesity" and "overweight" are used interchangeably. "Obesity" generally connotes a marked excess of body fat content in relation to the body frame, whereas "overweight" conveys weighing more than average based upon one's height and weight. The use of the word "obesity" is purposely avoided with adolescent health counseling, because of the embarrassing, hopeless connotation it gives to many people, particularly young girls.

"Health" refers to a state of physical, psychological and emotional well-being. "Health counseling" is defined as assisting the counselee in finding a solution to a health-related problem.

Chapter 2

ANALYTICAL SURVEY OF OBESITY

Obesity has been a serious health problem for many years. Its increasing incidence has lead to investigations not only by health professionals and health-related governmental agencies, but also by the general public. The complexity of the problem of obesity has resulted in extensive publications and in widespread advertisements all too frequently presenting conflicting views.[1]

This chapter using selected professional health literature attempts to present a statistical picture of obesity as it affects different age categories.

As reported in this health literature based upon scientific research, causal relationships between obesity and certain diseases are identified.

Influences of food faddisms, special dietary regimens, reducing salons and reducing aids are explored as reported in health literature, and their adverse impact discussed.

PREVALENCE

Accurate statistics on the prevalence and incidence of overweight and obesity in our nations' total population are nonexistent. An approximation of the prevalence of obesity in the country's population, however, is available.

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[1]Samuel M. Fox III, M.D. (ed.) Obesity and Health, Public Health Service Publication No. 1485 (Arlington, Virginia: U. S. Department of Health, Education and Welfare, 1966), p. 4.

The different criteria and the variety of methods used in group studies and data collection have reduced the statistical accuracy. The available statistical data, however, indicate a substantial prevalence of obesity at every age group in our population. The statistics are generally based upon standard height-weight tables.[2] These tables classify the body frame as small, medium or large. The interpretation of the body frame is determined by the particular investigator, which lends to a marked degree of variance. The only accurate, direct method for measuring body fat content is chemical analysis, a method presently not possible with human beings.[3]

The most accurate and most practical method to measure body fat content, according to Dr. Jean Mayer, is by use of the caliper. The caliper is an instrument which measures the skinfold on specific areas of the body.[4] The Committee on Nutritional Anthropometry of the National Research Council recommends using the caliper on the triceps and the subscapular skinfolds as good indexes to an individual's overall fatness.

According to studies conducted by Dr. Michael Irwin, Medical Officer at the United Nations, the evidence indicates that approximately twenty million people in the United States are ten percent or more overweight and about five million are at least twenty percent overweight.[5] These figures are given as conservative estimates.

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[2]Ibid., p. 2.

[3]Jean Mayer, Ph.D., Overweight Causes, Cost, and Control (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1968), p. 3.

[4]Ibid., p. 31.

[5]Michael H. Irwin, M.D., Overweight - A Problem For Millions," Public Affairs Pamplet No. 364 (New York: Public Affairs Committee, 1969), p. 1.

Other recent studies done by Waxler and Leef, at the University of California Medical Center, concluded that 30 percent of the present adult population of the United States can be considered obese. In contrast, 15 percent of the American people were classified as obese at the turn of the century.[6] It can be concluded that obesity is definitely on the increase among the American population.

A more startling report reveals that the average adult weight in the United States is approximately fifteen pounds above the weight indicated on standard health records.[7]

Dr. Mayer reporting studies based upon the use of calipers, revealed 16 percent of the American population under age 30 to be obese.[8] Regardless of the methods used to determine excess body fat, the fact remains that obesity is a major health problem today.

Increasing concern is directed toward childhood obesity because of its detrimental physiological and psychological effects on a potential life span. Retrospective studies have indicated that childhood obesity often continues into adulthood. Estimates of the prevalence of obesity among elementary and high school students range from 10 percent to 39 percent, the prevalence increasing with age. The studies also indicated that the percentage of obesity is higher among girls than boys. Based upon a twenty-year study reported by Abraham and Nordsieck, 86 percent of 50 boys studied remained overweight as adults; 80 percent of 50 overweight girls studied

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[6]S. H. Waxler and M. F. Leaf, "Obesity; Doctor's Dilemma," Excerpta Medica Endocrinology, 24 (January-June, 1970).

[7]"Did You Know?", Nutrition News, 25:3 (October, 1962), 11.

[8]Mayer, op. cit., p. 33.

remained overweight as adults. Half of the children classified as obese on entering school were still obese at age 10 and 15.[9]

Arnold and White indicate that approximately one out of every five adults in the United States is overweight with a much higher increase among teenagers. Based upon a study of teenagers conducted by the United States Department of Health, Education and Welfare, 32 percent were overweight at age 14, 37 percent at age 15 and 39 percent at age 16. In comparison to girls, fewer boys were overweight in all age categories.[10]

In Dr. Jean Mayer's studies with adolescent girls from the Boston area, the prevalence of overweight was above 12 percent and estimated as high as 15 or 16 percent by the time they graduated from high school.[11]

The statistical data on prevalence of obesity evidenced from undesirable effects, particularly on the young adults, emphasize the need both for basic research and for the development of programs aimed at prevention and control.

RELATIONSHIP TO MENTAL AND PHYSICAL HEALTH

The exact relationships between obesity and disease are not fully known. Medical experience, however, strongly suggests a greater risk for overweight people with regard to most of the disorders affecting

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[9]"Natural History of Obesity: Infancy Through Adolescence," Dairy Council Digest, 39:1 (January-February, 1968), 1.

[10]Pauline Arnold and Percival White, Food Facts For Young People (New York: Holiday House, Inc., 1968), pp. 66-67.

[11]Mayer, op. cit., p. 44.

the population.[12]

According to quantitative, long-term studies on overweight people conducted by life insurance companies, fat persons are more susceptible to the development of certain diseases and die at an earlier age than people of normal weight.[13]

The Build and Blood Pressure Study conducted by the Society of Actuaries in 1959 demonstrated a significant relationship between body weight, health and longevity. This study was based on nearly five million people insured by 26 large United States and Canadian Life Insurance Companies during the period 1935-53.

The data for men, Table 1, page 22 show an increase in mortality rate in proportion to the degree of overweight in the age category 15-69. The mortality rate rises steadily with the increasing degree of overweight, 13 percent for men 10 percent overweight; 25 percent for men 29 percent overweight and over 40 percent for men 30 percent overweight.[14] The lower portion of Table 1 shows that overweight men with no known minor impairment (slight blood pressure elevation, minor circulatory or urinary impairment which would not bar them from obtaining standard insurance) demonstrated an increase in the mortality rate in proportion to the degree of overweight. The mortality rate, however, was less for them than for the entire group of overweight men.[15]

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[12] W. W. Bauer, M.D. (ed.) Today's Health Guide (Chicago: American Medical Association, 1965), p. 142.

[13] H. H. Marks, "Influence of Obesity on Morbidity and Mortality," Bulletin New York Academy of Medicine, No. 36 (1960), pp. 298-310.

[14] Overweight Its Prevention and Significance, reprint from Statistical Bulletin, 40641 (New York: Metropolitan Life Insurance Company, 1960), pp. 9-11.

[15] Ibid.

Table 1

Mortality Among Overweight Men

Excess Mortality (Percent)* for Various Degrees of Overweight Cases Accepted for Ordinary Insurance in 1935-53, Traced to Policy Anniversary in 1954 By Age of Issue

Age Group at Issue	Deviation Above Average Weight				
	10% or More	20% or More	10%	20%	30%
All Cases+					
Ages 15-69	19	31	13	25	42
15-39	17	31	10	24	42
40-69	21	31	16	26	42
Cases Without Known Minor Impairments					
Ages 15-69	10	21	5	15	30
15-39	9	21	3	15	30
40-69	12	20	8	16	31

*Compared with all persons insured as standard risks.

+With and without minor impairments.

Source: Derived from Build and Blood Presure Study, 1959, Society of Actuaries.

Note: All the overweight men included in this table were insured either as substandard risks only because of weight, having no other impairment that would bar them from obtaining standard insurance.

In relation to mortality from specified diseases, the rate is higher among overweight men. As shown in Table 2, page 24, men with cardiac and circulatory diseases who were 20 percent or more overweight, the mortality rate was more than two fifths higher than among standard risks. For central nervous system and vascular disorders, the mortality exceeded 50 percent as compared to standard risks. The mortality from diabetes among overweight men was more than double. Digestive diseases were 68 percent higher. Pneumonia and influenza showed one third increase. A moderately elevated mortality with cancer was noted. Also, a slight increase can be seen with accidents and homicides. The highest mortality increase recorded was from renal disease which was nearly 75 percent above the standard risk.[16] It can be concluded that the mortality rate due to specified diseases increases with excessive weight gain.

The health and longevity of women is also adversely affected by overweight, although to a lesser degree than with men. Similar research was conducted by the Build and Blood Pressure Study on women ranging in age 15-69 years. Table 3, page 25, shows that the mortality rate increased steadily from 9 percent for women 10 percent overweight to 30 percent for women 30 percent overweight.[17]

The lower portion of the table shows that the mortality rate is higher than average for overweight women who had no known minor impairments. The mortality rate, however, was also less for them than for the entire group of overweight women.[18]

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[16] Ibid.

[17] Ibid., pp. 12-14.

[18] Ibid.

Table 2

Causes Of Death With Excess Mortality Among Overweight Men

Excess Mortality for Specified Causes Among Men Approximately 20 Percent or More Above Average Weight Ages 15 to 69 at Issue

Cases Accepted for Ordinary Insurance in 1935-53
Traced to Policy Anniversary in 1954

Cause of Death	Excess Mortality (Percent)*	
	All Cases+	Cases Without Known Minor Impairments
Cardiovascular-renal diseases.		
Heart and circulatory diseases.	43	29
Coronary artery disease	35	23
Vascular lesions of central nervous system.	53	29
Nephritis	73	54
Malignant neoplasms	16	14
Diabetes mellitus	133	91
Pneumonia and influenza	32	1
Diseases of digestive system.	68	49
Accidents and homicides	18	15

*Compared with all persons insured as standard risks.

+With and without minor impairments.

Source: Derived from Build and Blood Pressure Study, 1959, Society of Actuaries.

Note: All the overweight men included in this table were insured either as standard risks or were rated as substandard risks only because of weight, having no other impairment that would bar them from obtaining standard insurance. The original data of the study do not permit direct computation of mortality by cause for specific degrees of overweight.

Table 3

Mortality Among Overweight Women

Excess Mortality (Percent)* for Various Degrees of Overweight Cases Accepted for Ordinary Insurance in 1935-53, Traced to Policy Anniversary in 1954 By Age of Issue

Age Group at Issue	Deviation Above Average Weight				
	10% or More	20% or More	10%	20%	30%
All Cases+					
Ages 15-69	18	25	9	21	30
15-39	14	21	7	15	22
40-69	23	32	11	25	36
Cases Without Known Minor Impairments					
Ages 15-39	9	15	2	11	20
15-39	6	12	1	6	12
40-69	13	20	3	15	25

*Compared with all women insured as standard risks.

+With and without minor impairments.

Source: Derived from Build and Blood Pressure Study, 1959, Society of Actuaries.

Note: All the overweight women included in this table were insured either as substandard risks only because of weight, having no other impairment that would bar them from obtaining standard insurance.

Comparable to the male statistics regarding mortality from specified diseases, overweight women also demonstrate a higher mortality rate. The increased percentages are seen in Table 4, page 27 .[19]

These studies of obesity-morbidity-mortality ratio conducted by insurance companies of course have certain limitations. They are restricted to a selected group, specifically the insured population. Other factors which lessen the validity are in many instances utilization of unverified statements from the insured individual and lack of standardization for reporting causes of death. In spite of insurance data limitations, the possibility of obesity as a direct or indirect cause of increased morbidity and mortality must always be considered.[20]

Four health hazard areas associated with obesity have been identified. They are (1) normal body function changes, (2) increased risk in developing certain diseases, (3) harmful effects on existing diseases, (4) adverse psychological reactions.[21]

Respiratory complications are medically evidenced in overweight people. Generally, the greater the amount of obesity, the greater the risk for developing abnormalities. Fat people observed have shown less exercise tolerance, more breathing difficulties and a higher rate of respiratory infections as compared to people of normal weight.[22]

A relationship between obesity, cardiac enlargement, congestive

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[19] Ibid.

[20] Fox III, op. cit., p. 100.

[21] Mayer, op. cit., p. 100.

[22] Ibid.

Table 4

Causes Of Death With Excess Mortality Among Overweight Women

Excess Mortality for Specified Causes Among Women Approximately 15 Percent or More Above Average Weight Ages 15 to 69 at Issue

Cases Accepted for Ordinary Insurance in 1935-53
Traced to Policy Anniversary in 1954

Cause of Death	Excess Mortality (Percent)*	
	All Cases+	Cases Without Known Minor Impairments
Cardiovascular-renal disease		
Heart and circulatory diseases.	51	25
Coronary artery disease	35	10
Vascular lesions of central nervous system.	29	2
Malignant neoplasms	13	8
Diabetes mellitus	83	50
Pneumonia and influenza	27	12
Diseases of digestive system.	39	19

*Compared with all women insured as standard risks.

+With and without minor impairments.

Source: Derived from Build and Blood Pressure Study, 1959, Society of Actuaries.

Note: All the overweight women included in this table were insured either as standard risks or were rated as substandard risks only because of weight, having no other impairment that would bar them from obtaining standard insurance. The original data of the study do not permit direct computation of mortality by cause for specific degrees of overweight.

heart failure and hypertension has also been noted.[23]

Long-term studies conducted on a large male population concluded that:

1. A higher percentage of hypertension is present among the obese than among the non-obese.

2. The obese hypertensive runs a higher risk of coronary heart disease than the non-obese hypertensive.

3. The mortality rates for people suffering from obesity and hypertension are higher than for people suffering from one or the other.

These same studies indicate that the increased blood pressure associated with overweight people will often return to normal levels following a significant loss of weight.[24]

Similarily, studies conducted on blood cholesterol levels with obese people will usually show a decrease in the amount of cholesterol present in the blood vessels following the overweight individual's return to normal weight. The reverse will occur, however, if the individual puts on excessive weight. High cholesterol levels appear to be one of the contributory factors seen in atherosclerosis. This disease is characterized by fatty deposit formations in the inner arterial layers. It must be understood that there are many other factors which can be related to atherosclerosis. Some of these other factors are excessive cigarette smoking, stress, diet, high blood pressure and heredity.[25]

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[23]Fox III, op. cit., p. 24.

[24]Ibid., pp. 24, 25.

[25]Irwin, op. cit., p. 10.

The disease, Diabetes Mellitus, a carbohydrate metabolic disorder, is found to be four times more prevalent in overweight individuals than in those individuals of normal weight. In addition, the death rate of overweight diabetics is found to be three times higher than the death rate of those diabetics who are underweight or of average weight. It must be noted that there is presently little scientific evidence that overweight alone causes diabetes. It is common knowledge, however, that overweight can hasten the development of the disease. Much research is still required in the area of obesity and metabolic diseases, although on the basis of what is known, the treatment of the overweight diabetic should include weight reduction.[26]

The arthritic diseases which affect multiple joints of the body are commonly known to be much worse in those people who are overweight because of the added strain placed upon the affected joints. According to the Arthritis and Rheumatism Foundation, one of the most important factors in the treatment of arthritic diseases is weight reduction for the overweight individual afflicted with the disease.

Many psychological aberrations have been noted in obese individuals although it has not been clearly determined whether the psychological implications were a direct result of obesity or preceded the problem of obesity. The fact remains that a relationship does exist between food consumption and the emotional status of an obese individual.

Dr. Hilde Bruch, a renowned psychiatrist who has done extensive work in the area of obesity, sees overeating in certain obese patients as an ultimate compensation for anxiety and frustration. Dr. Joyce

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[26]Ibid.

Brothers, an eminent psychologist, notes that many women consume food for the primary purpose of reassuring themselves of their well-being.

Distinct from adult obesity, the physical and psychological factors as they relate to adolescent obesity are of utmost concern, since adolescent obesity has become such a common medical problem. Adolescence comprises a crucial period of development in which obesity poses a very serious threat. Obesity not only affects the adolescent's immediate and future health, but it also affects the adolescent's emotional adjustments, social relationships and educational performance.[27] Extreme passivity and a dependent relationship with parents, particularly with the mother, are seen with many obese adolescents. These adolescents usually experience difficulty in forming friendships and are frequently withdrawn, insecure and unhappy youngsters.[28]

The serious implications of adolescent obesity have been attested by multiple follow-up studies which have demonstrated that if obesity persists into adulthood, it will constitute a more severe and resistive form of the affliction.

A united effort on the part of all concerned individuals, the overweight child, the parents, the physician and the school personnel is one key to the prevention and control of childhood obesity.

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[27]S. L. Hammar, M.D., "Adolescent Obesity," Nutrition News, 27:3 (October, 1964), 1.

[28]Ibid.

INFLUENCES OF FOOD FADDISMS AND QUACKERY

One of America's primary social problems today is created by erroneous and misleading advertising which promotes the sale of drugs, various types of health devices and reducing aids. More than 500 million dollars a year are spent on unnecessary or falsely represented vitamins and mineral products and on so-called health foods.[29] Numerous publications appear almost daily on the efficacy of certain diets and the value of a variety of gadgetry to promote weight reduction.

A large proportion of our population today, especially the overweight, fall easy prey to these dubious claims. The unhappy overweight adolescent female is particularly vulnerable to the much advertised quick-and-easy-way to weight loss. All too frequently the results are disappointing and can be dangerous to health.

The investigation of food faddisms and quackery in this study is confined to its association with weight reduction. Overweight persons appear to be the most common victims for faddists and quacks.

In order to provide a composite picture of the exploitation by self-styled experts, it is helpful to define the terminology used.

Dr. Ruth Heunemann, specialist in nutrition, gives the following definitions:

> Quack - a person pretending to a knowledge which he does not possess (in medicine, nutrition, or foods). Motivation of the quack usually is financial gain. He exists because food faddists exist.

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[29] Patricia Cote, People, Food and Science (Boston: Ginn and Company, 1968), p. 110.

Food Faddist - one who follows certain food customs for a time with exaggerated zeal, such as enthusiasts for yoghurt, molasses and so on.

Food Fads - There are many types of fads. Most popular, perhaps are the following four types:

1. Those involving exaggeration of the virtue of a particular food or diet, e.g., fruits cure cancer.

2. Those advocating omission of certain foods because of harmful properties ascribed to them, e.g., white bread is poisonous.

3. Fads emphasizing "natural" foods, such as foods grown on soil treated with organic rather than chemical fertilizer, or unprocessed foods. Such fads obviously exclude from the diet a large portion of our food supply, and raise doubts in the minds of Americans about the integrity and purity of the nation's food supplies. Such doubts create a market for the quack's special products that sell for much more.

4. Fads involving special devices, e.g., reducing diets.[30]

Today we see more and more health stores springing up all over the country. Many drug stores and food stores have set up special health food counters for the purpose of capitalizing on the vulnerable misinformed individual.

The term "health foods" is actually a misnomer, since it implies that these foods have certain health producing or curative properties. In reality, they contain the nutritive qualities that are found in any wholesome food product. For example, Paraguay tea has no more healing properties than ordinary tea, nor will gelatin prevent fatigue or help cure stomach ailments and obesity.[31]

Fad diets are aimed primarily at the overweight person. They are menus generally pushed by people who have little or no knowledge of nutrition. These diets usually emphasize the elimination or inclusion

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[30]Ruth L. Huenemann, D.Sc., "Combating Food Misinformation and Quackery," Journal of The American Dietetic Association, 32:7 (July, 1956), 623-624.

[31]American Medical Association, op. cit., p. 325.

of certain foods.[32]

In the middle 1800's in England, William Banting who was grossly overweight placed himself on a special diet which resulted in a marked weight loss. He published the diet and recommended its use. The diet consisted essentially of meat, fish and fruit. It was high in protein content and low in calorie value. Now it is common knowledge that any special diet low in calorie intake will cause a weight loss. It is unsafe, however, to use a special diet that does not contain all the essential nutrients. Most of the much advertised reducing diets are lacking in this respect.[33]

High fat diets and carbohydrate diets have been highly popularized over the years as a means of losing weight. An increasing number of overweight teenage girls are experimenting with these frequently advertised diets. Scientific evidence has shown that these special diets when used over a prolonged period of time can be physically damaging.

A vast array of reducing pills continues to flood the consumers' market. The common pep pills or stimulant drugs such as Benzedrine and Dexedrine have valuable medical use but can be habit-forming and may be dangerous when improperly used.[34]

Another area exploited by the faddist is the broad claim of weight reductions by mechanical massage, vibrating devices, rubber garments, weight-reducing liquids, etc.

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[32]E. W. McHenry, Ph.D., Foods Without Fads (New York: J. B. Lippincott Company, 1960), p. 128.

[33]Ibid., pp. 130-31.

[34]American Medical Association, op. cit., p. 327.

Innumerable weight reducing salons have come and gone over the years and their popularity persists. They employ multiple reducing devices, including hot baths. There is no scientific evidence that any of these devices have special value in weight reduction. On the contrary, in some instances use of such mechanisms may be dangerous to individuals with health problems.

The emergence of so many food fad and quackery enterprises has given rise to a variety of programs designed to control and eliminate major abuses. Law enforcement agencies tend to extend their control through broader enforcement programs.

The Better Business Bureaus, nonprofit organizations of business, attempt to protect the public and business from advertising and selling practices which are deceptive, misleading or fraudulent. They have assumed the responsibility of disseminating factual information for the purpose of exposing deception and fraud in advertising and selling. However, with the continuous, multitudinous flow of new materials appearing almost daily on the market, it is virtually impossible to maintain a satisfactory vigilance.[35]

Educational effort has achieved considerable success on the positive view of nutrition, but this is not the case on the negative side regarding fallacies and quackery. Further emphasis needs to be placed upon inquiry, analysis, recognition and rejection of that which is false and without scientific basis.[36]

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[35]Marshal A. Mott, "Better Business Bureaus Fight Food Faddism," Journal of the American Dietetic Association, 39:2 (August, 1961), 122-23.

[36]Wallace F. Janssen, "Food Quackery - A Law Enforcement Problem," Journal of the American Dietetic Association, 36:2 (February, 1960), 111-12.

In summary, education needs to take a preventive approach which should begin in early childhood and continue throughout the individual's educational career. Consequently, one element of a health counseling program for adolescent girls involves both a preventive and informational approach. Adolsescent girls expect to be informed of pitfalls in the area of food faddism and quackery.

Chapter 3

ETIOLOGY OF OBESITY

The multietiological factors in obesity have limited the overall findings regarding causation, prevention and treatment of this major health problem. Separation of cause and effect is often impossible, since obesity may be caused and perpetuated by certain inherent factors as well as environmental, endocrine, metabolic and psychological conditions.

Many obesity-related laboratory studies have been conducted on animals, and certain correlations have been applied to human obesity. The scientific research, however, on human obesity has been relatively limited. The relationship of the significance of heredity, metabolism, environment and psychology to obesity is explored in this chapter in the light of the relatively limited scientific studies which have been done.

HEREDITARY FACTORS

Some of the earlier scientific investigators believed that body stature and obesity were influenced by genetic transmission. These researchers, in their attempt to explain variations in human body structure have categorized human shapes according to basic inherent types. It is commonly known that the bony structure and musculature including fat distribution is the result of heredity. Nevertheless, certain inconsistencies have been demonstrated due to the unpredictable changing shapes

observed in many people over a period of time.

Dr. E. Kretschmer was one of the first to attempt genetic classification according to body types. She has described the following four distinct types:

1. The pkynic - short and fat, thick neck, protruding abdomen, barrel-shaped thorax.

2. The leptosome - elongated, tall and slender, with long legs, hands and feet, long face, narrow chest.

3. The athletic - the intermediate type, with broad, square shoulders, muscular limbs, large hands and feet.

4. The dysplastic - the "mixed-trait" type, having parts of one type, parts of another, which characterizes many young people.[1]

Since Dr. Kretschmer's system of classification, a new science known as somatotyping has been developed. This system classifies body build into three distinct types: ectomorphy, mesomorphy and endomorphy. They are described as follows:

1. Ectomorph - long lean body build, usually small muscle development and light skeletal structure. The ectomorphs are rarely overweight. The food consumption is generally higher than other individuals, but they do not show any marked weight increase.

2. Mesomorph - large heavy skeletal and muscle development.

3. Endormorph - usually soft, round body structure with considerable body fat. People generally fall into one of the categories described above. Most commonly, is the individual who is a combination of two of these types.[2]

It is not clearly understood whether heredity affects total fatness as well as bone, muscle structure and fat distribution. It is clear, however, that the relationship of heredity and body build reveals

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[1]Amram Scheinfeld, Your Heredity and Environment (New York: J. B. Lippincott Company, 1965), p. 116.

[2]Marjorie B. Washbon and Gail G. Harrison, "Perspectives on Overweight," Cornell Extension Bulletin, No. 1223 (January, 1970), 6.

to us that what may be a realistic goal in weight reduction for one individual may not be a realistic or healthy goal for another individual. With advanced research, the possibility of identifying those individuals predisposed to weight increase should play an important role in preventing obesity.[3]

Studies conducted by Seltzer and Mayer tend to substantiate the inherent body build types indicating that the genetic factors do influence the susceptibility to obesity. They concluded that obesity occurs most frequently in the physical type characterized by a skeleton which is larger than average, with a large muscle mass and short, broad extremities, i.e. the mesomorph.[4]

Further studies stressing the importance of the genetic background in obesity were conducted with identical and nonidentical twins which showed a much closer similarity in the weights of identical twins even when they were raised under different environmental conditions. There was a significantly greater weight difference between the fraternal twins.[5]

According to Dr. A. J. Stunkard, only 10 percent of the children are found to be obese when neither parent is obese. A striking increase takes place where obesity is present with the parents. The percentage goes up to 40 percent when one parent is obese and as high as 80 percent when both parents are obese.[6]

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[3]Ibid., p. 7.

[4]Jean Mayer and D. W. Thomas, "Regulation of Food Intake and Obesity," Science, 156, No. 3773 (April 21, 1967), 335-36.

[5]Ibid.

[6]Albert J. Stunkard, "Obesity," The Encyclopedia of Mental Health, ed. Albert Deutsch (New York: Franklin Watts, Inc., 1963), p. 1374.

Conclusively, one can see that obesity tends to be a familial characteristic. Obesity in children is found to be far more common when both parents are obese than when neither parent is obese. It follows that overweight children tend to become overweight adults and generally differ constitutionally from the mesomorphic type person.

ENDOCRINE AND METABOLIC FACTORS

Multiple endocrine and metabolic aberrations have been reported in obese people. It is not definitely known whether they represent cause or effect of the obese state. In either instance the existing abnormality tends to perpetuate the obesity syndrome.

For instance, insulin, the antidiabetic hormone, promotes the combustion of carbodydrates by the muscle tissue and synthesizes fat from the carbohydrates in adipose tissue. It is believed that insulin as a fat promoting hormone has a bearing on obesity.[7]

Weight increase often precedes maturity-onset diabetes, and obese people generally have an impaired glucose tolerance. In both cases a delayed but greater than normal increase in circulating endogeneous insulin follows a carbohydrate meal. In addition, a higher and more prolonged rise in blood sugar is seen along with a lesser decrease in fatty acids. This paradoxical hyperglycemia in spite of the excessive insulin secretion indicates an inexplicable insulin resistance or antagonism. Consequently, the available insulin is effective in overcoming hyperglycemia. The metabolic carbohydrate impairment places an increasing demand on the pancreas for more insulin. Since the insulin

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[7]Margaret J. Albrink, "Obesity," Cecil-Loeb Textbook of Medicine, eds. Paul B. Beeson and Walsh McDermott (12th ed.; Philadelphia: W. B. Saunders Company, 1968), p. 449.

antagonism seems to involve the muscle and not the adipose tissue, the excess insulin is rendered ineffective in the muscle and active in the adipose tissue. The diversion of carbohydrate away from the muscle to the adipose tissue results in the fat deposition. In some instances, particularly early diabetes, the insulin response even though delayed may be great enough to overcome the insulin resistance and cause a late reactive hypoglycemia. Hunger, which is a result of the hypoglycemia will cause an increase in caloric intake. According to Dr. Albrink, it is not clearly understood whether the increased secretion of ineffective insulin is the result of obesity and is remedied by weight loss or whether the insulin resistance appears first and is a contributory factor to obesity.[8]

However, in a recent study conducted at the V.A. Hospital, Birmingham, Alabama, the findings suggest that increased insulin may persist in obesity following weight reduction and it may therefore be possible that abnormality in insulin secretion may precede the development of obesity.[9]

Obese patients with atherosclerosis are often found to have increased concentrations of the serum lipids as well as hyperinsulin response, insulin resistance and impaired glucose tolerance.[10]

Results of a study conducted in Poland on 50 obese patients, age 18-45, demonstrated an increase in the serum lipids and also an increase in peripheral elastic resistance. The findings strongly

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[8]Ibid.

[9]B. R. Bushell and others, "Serum Insulin in Obesity and Diabetes Mellitus," Excerpta Medica Endocrinology, 24 (July-December, 1970).

[10]Albrink, op. cit., p. 1165.

indicate the relationship of atherosclerosis to obesity.[11]

The distribution and amount of body fat has been proved to be effected by the sex hormones. Men generally have less subcutaneous fat than women. There appears to be substantiating evidence in the relationship between weight increase with parity and menopause indicating the activity of the female sex hormones in fat metabolism. The absence of the male hormones as seen in obese eunuchs appears to be tied in with adiposity.[12]

Thyroid malfunction has been reported to play a role in obesity. Under this premise thyroid derivatives are frequently prescribed for obesity. Although according to Dr. Albrink, thyroid deficiency has not been observed in the etiology of obesity and the thyroid function is generally found to be normal in obese individuals. She further states that toxic doses of thyroid would have to be administered to render weight loss, which in turn would prevent an accurate evaluation of thyroid function because of the resultant suppression of endogenous thyroid secretion.[13]

Another metabolic disorder reported in obese adults is the inability to utilize water. The oxidation of 100 grams of fatty acid produces about 112 grams of metabolic water. Since there is impairment in the excretion of water by obese individuals, weight loss by fat mobilization and metabolism may not be evident. These obese people

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[11]J. Hasik and others, "The Investigations Governing Artherosclerosis in Subjects With Simple Obesity," Excerpta Medica Endocrinology, 24 (January-June, 1970).

[12]Albrink, op. cit.

[13]Ibid.

show a diminished glomerular filtration rate, an increased titer of antidiuretic hormone and significantly reduced renal clearance of water. There is also evidence of an impairment in the excretion of sodium by these obese persons.[14]

There apparently exists a central regulatory mechanism which has an influencing effect on food intake. This mechanism is found in the hypothalamus. Experiments carried out on laboratory animals have demonstrated that induced lesions of the ventromedial nucleus of the hypothalamus are related to the development of obesity which results from increased food consumption. This particular area is known as the satiety center. It is believed the satiety center receives impulses from various organs of the body through the autonomic nervous system. Hunger contractions occur and the individual is desirous of food.[15]

Brain damage and its relation to obesity has been reported by Dr. Stunkard. He states that frontal lobotomies performed on certain mental patients frequently resulted in a marked increase in appetite and body weight.[16]

Increasing studies on the endocrine and metabolic factors in obesity are evident with adults. In contrast, very little information exists on the physiological and biochemical implications of obese children and adolescents. Although studies conducted on young people regarding obesity and metabolic disorders are limited, they have

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[14]Committee on Nutrition, "Obesity in Childhood," Pediatrics, 40:3 (September, 1967), 459.

[15]Ibid., pp. 455-56.

[16]Stunkard, op. cit., p. 1374.

demonstrated findings similar to that of the studies carried out on the obese adults.[17]

Recent research, involving thirty-five obese children ranging in age from preschool to over fifteen, classified twenty-one as metabolically obese because their post-glucose level of non-esterified fatty acids was higher than the levels found in the "normal" obese children. Another study demonstrated obese children to have higher fasting levels of ketones and various lipids than children of normal weight.[18]

Thus far, the effects of etiology on obesity in this report have included predisposing hereditary factors as well as associative endocrine and metabolic implications, which are not entirely understood. The next section deals with the effects of environment as it relates to obesity. The term environment is used to incorporate the cultural, social, economic and religious influences.

ENVIRONMENTAL FACTORS

Environmental factors and their relationship to obesity are discussed from the ethnic, social, economic and religious viewpoints. Each of these areas have varying degrees of impact upon the individual's life style, food selection and obesity.

Many researchers, including anthropologists, nutritionists, sociologists, and other health specialists, have attempted to explain certain patterns of eating and behavior through the aforementioned conditions.

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[17]Felix P. Heald, M.D., "History and Physiological Basis of Adolescent Obesity," Nutrition News, 28:4 (December, 1965), 13, 14.

[18]"Natural History of Obesity: Infancy Through Adolescence," Dairy Council Digest 39:1 (January-February, 1968), 2, 3.

Dr. Dorothy Lee, a distinguished anthropologist, speaks of food in an all encompassing manner. She says, referring to food and human existance,

> I mean something beyond mere biochemical nutrition, and more than mere physical survival. Food can engage me completely as a person. It can bring to life my keen anticipation, my impatient or happy waiting; it can evoke my memory in all its pain and joy; it can revolt me to the point of vomiting. Its preparation can be an act of relatedness, of obligation, or self-fulfillment, of creativity, of love; its eating can be participation and communion. Let us hope it also nourishes me with the proteins, vitamins, carbohydrates and other nutrients I need to stay alive and healthy so that I can experience the fullness of human existence.[19]

From the moment of an infant's very first experience with food, an associative feeling of warmth, comfort and security occurs. This first experience with food continues in many societies and food frequently becomes the focus for total existence. In some societies, new friendships can only take place with the exchange of food.[20]

Food also has a central focal point in our society which can be unrelated to nutrition. Dr. Lee cites the example of the Detroit supermarkets adding black-eyed peas and mustard greens to their stock when large numbers of Southerners moved to the city.[21] In comparison, stores located in neighborhoods predominantly Italian, Oriental, Polish and other nationalities, carry certain foods peculiar to each nation. We find that food habits are deeply embedded in cultural tradition. Similarly, certain sections of the country have distinct eating habits generally dependent upon their local food products. New Englanders eat more fish than the middle westerners; California and Florida consume more semi-

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[19]Dorothy Lee, Ph.D., "Food and Human Existence," Nutrition News, 25:3 (October, 1962), 1.

[20]Ibid.

[21]Ibid.

tropical fruits than other sections of the country.

Socioeconomic factors, too, play an important role in the kinds of food an individual eats. The poor family is limited in purchasing power and can generally buy only low-cost foods which may or may not be good choices. The wealthy family, on the other hand, is able to buy a wide variety of foods which also may or may not be good choices.[22] Cost, however, is just one aspect of multiple influences affecting the individual's state of health.

A recent study linking socioeconomic factors to obesity was conducted by Dr. Stunkard. It involved adults in an urban community ranging in age from 20 to 59 years. The results revealed that obesity in the United States was strongly associated with the socioeconomic class. There was a marked decrease in the obesity in the upper socioeconomic group as compared with the lower socioeconomic group. The association was most striking in women. The prevalence of obesity was 30 percent among women of lower socioeconomic status, 16 percent among those of middle status and only 5 percent in the upper socioeconomic bracket. The influence of religion and ethnic background cannot, however, be ignored.[23]

In contrast, Dr. Jean Mayer conducted a study on a much smaller group of adolescent girls from Newton, Massachusetts, a relatively homogenous community. His study did not show much correlation between obesity and social class. The possibility of social pressures on adults

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[22]Mary M. Hill, "Creating Good Food Habits - Start Young, Never Quit," Yearbook Separate No. 3659, Reprint from Yearbook Of Agriculture (Hyattsville, Maryland: U.S. Department of Agriculture, 1969), p. 260.

[23]A.J. Stunkard, "Environment and Obesity: Recent Advances In Our Understanding of Regulation of Food Intake In Man," Dairy Council Digest, 40:2 (March-April, 1969), p. 11.

has been indicated as a causal factor in obesity.[24]

We also see religion as having an effect on one's dietary selections which may in turn affect one's physical status. Some religions abstain from eating certain foods at all times and some foods at specified times.

The Orthodox Jews, for instance, will not eat milk and meat dishes at the same time. They will not eat any form of meat which comes from a pig.

The abstinence of eating pork is also a part of the Muslim religion. The Arabian Prophet Mohammad, in the 7th Century A.D. announced the prohibition against the consumption of pork. Founder of Mohammedanism, he recorded in the Koran:

> Forbidden to you are
> carrion, blood, the flesh of swine,
> what has been hallowed to other than God,
> the beaststrangled . . .[25]

The Greek Orthodox Church during the seven weeks of the Solemn Lenten Season forbids its parishioners from eating any animal products, including fish, eggs, butter and cheese. Wine and olive oil are also forbidden on Wednesdays and Fridays during the Lenten Season.[26]

In ancient China under the Deism of Confucius, food was treated with great respect. Many of the Confucian religious precepts dealt with the preparation and eating of food. Rice was the sacred food.[27]

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[24]Mayer, op. cit., pp. 90, 91.

[25]Harry B. Nickles and others, Middle Eastern Cooking (New York: Time-Life Books, 1969), p. 10.

[26]Ibid., p. 49.

[27]Emily Hahn and others, The Cooking of China (New York: Time-Life Books, 1968), p. 90.

The sacredness and ancient respect for food, particularly rice, is seen as a continuation in modern Japan. The Shinto Religion emphasizes the offering of prayers to the Rice Goddess as well as the offering of prayers for good harvests.[28] The relatively small islands comprising Japan limits its production of foodstuffs. This may very well have religious, socioeconomic and ethnic influences. The Japanese people, in general, are small and lean in stature.

In our own present day society, the popularity of snack foods has become a part of the everyday eating and social pattern.

Each year Americans consume two billion dollars worth of potato chips, pretzels, nuts, crackers and similar snacks. The 1965 Household Food Consumption Survey conducted by the U.S. Department of Agriculture demonstrated an 83 percent increase in the consumption of potato chips over the 1955 figures, an increase almost five times the percentage increase in population or 17 percent.[29]

Another survey conducted by the National Soft Drink Association in 1966 reported that the average American consumed approximately 18 gallons that year of carbonated and noncarbonated sweetened beverages.[30]

The teenage population appears to be the largest group of snack consumers. Studies have shown that teenage girls tend to snack more frequently than teenage boys. The kind of snacks consumed can be considered empty calorie snacks or calories with little or no nutritious value. Studies previously reported indicated that the problem of obesity was more

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[28]Rafael Steinberg and others, The Cooking of Japan (New York: Time-Life Books, 1969), p. 16.

[29]Audrey C. Burkart, "Smarten Up and Snack Right! Here's How To Do It," Yearbook Separate No. 3661, Reprint from Yearbook of Agriculture (Hyattsville, Maryland: U.S. Department of Agriculture, 1969), p. 273.

[30]Ibid.

common among teenage girls than teenage boys.

With the introduction of modern methods of production in industry and the many labor saving devices found in the average home, the individual's physical activity has been lessened. The pattern of driving automobiles instead of walking, watching television instead of engaging in entertaining physical activity has added to the problem of obesity in our country.

The adverse effects of a sedentary life style were demonstrated in a study conducted by Dr. James Greene of Iowa City. He was able to trace the onset of obesity in two hundred patients directly to a sudden decrease in activity which resulted from occupational changes, fractures and other physiological impairments.[31]

Studies carried out by Dr. Jean Mayer and his associate, Mary Louise Johnson, on a group of high school girls suggested that relative inactivity was a more important factor than relative overeating in the development of obesity in young people. A similar study with obese and nonobese boys revealed similar findings.[32]

Further studies conducted by Dr. Mayer on babies demonstrated an association between moderate appetite, inactivity and fatness which tends to start in early life. Tiny pedometers strapped to the limbs of infants from four to six months old were utilized to ascertain the findings. No correlation existed between fatness and food intake, none between growth and intake, but a very significant correlation existed between physical activity and intake. The fat babies had small to moderate intakes but

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[31]Mayer, op. cit., pp. 73, 75.

[32]Ibid., p. 77.

were very inactive, whereas the thin babies were very active. Very thin babies were very active and many of them had large food intakes. Conclusively, the continuation of inactivity may well lead to obesity.[33]

As one can readily see, there are many paradoxes associated with obesity and the multiple environmental factors discussed. All of the areas investigated lead up to the overwhelming complexity involving the total problem of identification, prevention and treatment of obesity.

The concluding section of this chapter deals with the vast range of psychological implications observed in obesity.

PSYCHOLOGICAL FACTORS

Researchers, particularly psychiatrists and psychologists, have endeavored to explain obesity from the psychological point of view. Out of their studies have come variations on psychological causations, external influences, and treatment recommendations.

This section attempts to examine the scientific and professional views expressed by researchers on the implications of psychological factors in obesity. An analysis of some of the students conducted on the psychology of obesity is included.

Back in the early 30's Dr. Hilde Bruch became greatly concerned by the large number of obese children in the United States. She was particularly concerned by the grave social and emotional problems manifested by these fat children. At that time she was involved with studying the metabolic and endocrine factors in children at Babies' Hospital in New York City. She expanded her studies to include the relationship to person-

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[33] Ibid.

ality development and various forms of disturbed life adjustments.[34]

She concluded that social and emotional factors pervade our eating habits to the point of being regarded as natural and normal. Eating therefore, can be considered an interpersonal experience charged with the emotional complexity of the mother's own attitude, her internal and external forces and the interaction between her and her child.[35] Many parents are insecure in child rearing, vulnerable to deceptive advertising and misguided psychological advice. Consequently, they feel their child should never be frustrated, and resultant unhealthy eating habits may develop.[36]

Some of the clinical observations made by Dr. Bruch on fat children revealed that (1) their enormous food intake was closely related to severe emotional difficulties in their developmental stages, (2) food served to relieve their tension, provided them with immediate gratification, pleasure and satisfaction, (3) the overemphasis placed upon food by the mother revealed an inability in her emotional expression whereas the use of food was her way of showing love and devotion. Dr. Bruch advises that serious consideration be given to the emotional reactions before modifying food habits of the obese individual. Similar studies were conducted by Stunkard on obese adults and the observations were the same as those made by Bruch on the obese child.[37]

In his book, Your Overweight Child, Dr. Levine devotes a section to the emotional reasons for obesity. He believes that obesity in the pre-

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[34]Hilde Bruch, M.D., "Social and Emotional Factors in Diet Change," Nutrition News, 26:4 (December, 1963), 14.

[35]Ibid., p. 1.

[36]Ibid.

[37]Ibid.

school child stems from a lack of parental love. He points out that the need to be loved, wanted and admired is strongly embedded in every human being. Secondly, he says, sibling rivalry can be a causative factor in overeating. The overweight child when lacking in sufficient love turns to eating for personal gratification.[38]

He views overindulgent parents as having a strong influence on the impending obesity of their child, because they tend to overfeed, overindulge and underdiscipline the child. Along with the overindulgent parent he sees the problem of family strife. Where family disharmony exists, a disruptive environment is created which frequently results in the child seeking solace in food consumption.

With the overweight adolescent we acknowledge a crucial problem. It is commonly recognized that adolescence is a period of difficult adjustment. The need for peer acceptance at this time is extremely important. The overweight adolescent is self-conscious about her weight problem and tends to become withdrawn and frequently develops an attitude of hopelessness and an "I don't care" attitude. Girls especially are more concerned, manifest more apprehensive feelings about fatness than boys.[39]

In summary, Levine feels that obesity is a symptom and that the obese child tends to be emotionally immature and tries to withdraw from the struggle to grow up. A vicious circle ensues. Overweight results in unhappiness, which in turn causes an increase in food consumption for needed pleasure and comfort, followed by greater obesity and unhappiness. The vicious circle goes on and on.[40]

The treatment approach as advocated by Levine includes entire

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[38]Milton I. Levine, M.D., and Jean H. Seligmann, Your Overweight Child, (New York: The World Publishing Company, 1970), pp. 29-31.

[39]Ibid., pp. 31, 35.

[40]Ibid., pp. 40, 43, 44.

family involvement, encouragement of physical activity, emphasis on appearance and grooming, and a sensible dietary regime.

Dr. Mayer believes the assumption that obesity is rooted in psychology is widespread to the extent that it frequently tends to obscure the fact that there are cases of obesity which are not due solely to psychological causes. The example he relates is obesity due to inactivity. Such inactivity may in some situations be due to psychological aberrations, but it is most likely to be the result of environmental factors, including more leisure time, more labor saving devices, some sedentary entertainment, particularly television.[41]

Obesity is frequently looked upon with disdain and lack of sympathy in this country. Obese individuals are known to be frequently discriminated against in the job market and in social situations. This antagonistic attitude tends to have a negative effect upon the obese individual, particularly the sensitive obese adolescent girl.[42]

Dr. Mayer compares the obese adolescent with a minority group. He states these obese youngsters look different, behave differently, are less happy and less hopeful than their nonobese counterpart. He and his associates conducted an investigation attempting to discover personality traits in obese adolescents which would help them to better understand the factors which have created the obesity. This personality study was carried out on one hundred obese girls at a camp on Cape Cod, Massachusetts. The specific purpose of the camp was weight reduction. Each obese girl was treated as an individual with a personal problem. Sixty-five nonobese

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[41]Mayer, op. cit., p. 93.

[42]Ibid., p. 95.

girls attended a neighboring camp which had no specific goals except for participating in the usual activities of a summer camp. Projective tests were utilized which included word association and sentence completion. A questionnaire was also used as part of their study.[43]

The investigators concentrated on personality traits associated with decreased activity based upon existing data which demonstrated that obese adolescents of both sexes were less active than nonobese adolescents. The findings suggested that the personality traits and attitudes of the group studied were the results of the social and psychological pressures exerted by society on the obese adolescents. Further investigation revealed significant similarities between the characteristic traits of the obese adolescent girls and those similar traits found in ethnic and racial minorities. Societal pressures were more likely the results than the cause of obesity.[44]

Dr. Theodore Isaac Rubin, Psychiatrist, Psychoanalyst and Physician in charge of the Obesity Program at the Karen Horney Clinic, firmly believes that obesity has its basis in psychological roots. He was the author of the best-selling book entitled, The Thin Book By A Formerly Fat Psychiatrist. A victim of long standing obesity, he has been successful in remaining thin for several years. His most recent publication, Forever Thin, tells how he does it. He claims to have lost weight and sustained the weight loss because of his understanding of the underlying emotional causes of obesity. In his judgement, an understanding of the psychodynamics is absolutely essential in successful and sustained weight reduction. He believes that obesity is a neurotic psychological condition which causes overeating and

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[43] Ibid., pp. 117-21.

[44] Ibid.

the resultant excessive weight. The obese individual is highly suggestible and is preoccupied with food and weight. The discussion of food can bring on an immediate empathic craving for food. These obese people do care about their problem but find themselves incapable of doing anything about it. They engage in impulsive eating of huge quantities of food which often result in bloating, indigestion and sometimes more serious physical conditions. The immediate promise is not to overeat again, but the vicious circle continues.[45]

Dr. Rubin classifies the obese individual as a food addict, who has an overwhelming yearning for food. He compares the food addict with the alcohol addict in the sense that they have similar difficulties in relating to themselves and to other people. Their greatest difficulty lies in their inability to deal with anger. Both types are angry people with little awareness of their anger or ways of releasing it. Food addicts, according to Rubin, suffer physical and psychological withdrawal reactions when their food intake is curtailed. Most of these symptoms are emotional in origin. These obese people are prone to physical degenerative diseases and can suffer from depression.[46]

Rubin's approach to the correction of obesity is first to admit fatness. Secondly, to understand that obesity is a chronic condition which will require a continuous lifetime control. Thirdly, it is essential for the obese individual to understand his own personal dynamics and characteristics and to gain increasing insight and self-awareness. Lastly, he believes in developing a realistic interest in self-preservation, which

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[45]Theodore Isaac Rubin, M.D., Forever Thin (New York: Bernard Geis Associates, 1970), pp. 3, 4, 10, 11.

[46]Ibid., pp. 21-24.

will aid in increasing the self-worth of the individual. Rubin unequivically states obesity is controllable but it is not curable.[47]

Obesity with certain accompanying psychotic conditions has been observed by Dr. Stunkard. He believes that obesity frequently occurs in manic depressive persons. He has also observed disturbances of consciousness and severe neurosis as common conditions causing excess insulin in the body which in turn gives rise to overeating and obesity.[48]

An interesting recent study was conducted at the Harlem Hospital in New York City which identified the mother-child separation as a factor in the development of childhood obesity. Out of 72 consecutive patients referred to the Harlem Obesity Clinic, 23 or 31.9 percent were or had been living with mother surrogates. Only 6 of the 72 nonobese control children or 8.3 percent had histories of separation from their mothers. Those mothers who worked and were away from the home for a portion of the day had no apparent effect on the incidence of obesity.[49]

In this study, several conditions have been presented concerning psychological implications and obesity. Each investigator has been noted to place varying degrees of emphasis on certain causations which he or she has identified. Agreement exists in some areas, and marked variations occur in others. Obese people who seek the professional assistance of the psychiatrist are usually overtly manifesting neurotic symptoms. Consequently, studies conducted on these neurotic obese people cannot accurately be applied to all obese individuals.

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[47]Ibid., pp. 105-116.

[48]Stunkard, op. cit., p. 1375.

[49]Eric J. Kahn, "Obesity in Children: Identification of a Group at Risk in a New York Ghetto," Journal of Pediatrics, 77 (November, 1970), 771-774.

Similarily, studies concentrating on a specific aspect of obesity will systematically emphasize that particular aberration as a causative factor in obesity.

Accordingly, it can be deduced that no one single factor should be accepted as the one responsible element in the whole intricate spectrum of obesity.

BACKGROUND OF THE OBESITY PROBLEM: SUMMARY

Up to this point, the major conditions associated with the complicated problem of obesity have been analyzed. The extent of obesity in this country has been found to be alarmingly high. Consequently, obesity is regarded as a major health problem today.

The relationship between obesity and physical health, obesity and mental health, have been discussed in some detail. The most common obesity related diseases have been identified and certain correlations reported. The exact cause and effect relationship, however, is not known.

The widespread influence that food faddisms and the quackery may have on the American population has been noted, especially the impact on the female adolescent.

The etiological factors in obesity have been identified, namely hereditary, endocrine, metabolic, environmental and psychological. The relative importance of these factors is not clearly understood. Although, in terms of what is known, an associative link between obesity and the aforementioned factors is recognized.

Despite the current research and informational data available on obesity, there is no one satisfactory method for prevention, treatment or control. Many questions remain unanswered. The need for much additional

research is evident.

Several recommendations and modalities as noted in the health literature have been offered for helping the obese individual. It appears to be a unanimous agreement that a careful analysis should be made of the underlying emotional factors of the overweight person before introducing a weight reduction plan. Some of the other suggestions include an understanding of caloric value in relation to energy intake and energy expenditure; increased physical activity; development of diverse interests; and the provisions for reassurance and emotional support.

Since the school nurse-teacher is engaged in health counseling, and the health counseling program to be effective must be based on knowledge of existing research, a survey of the selected literature reporting the results of the research became a necessary part of this study. A thorough understanding of the complex factors intertwined with overweight helps to provide some of the necessary background for the school nurse-teacher for planning the development of an effective health counseling program. Finally, an awareness of all the multiple influences involved in a person's problem of obesity, the internal as well as the external factors, is essential for the health counselor who attempts beneficially to assist the overweight adolescent girl.

Another aspect of developing a health counseling program, the detailed steps for conducting the preliminary survey, is described in the next chapter.

Chapter 4

PRELIMINARIES FOR DEVELOPING A HEALTH COUNSELING PROGRAM

SURVEY OF SCHOOLS

One part of the process of planning a health counseling program for overweight adolescent girls was a survey of existing practices in schools in locations similar to the school in this study. Twenty-one secondary high schools were selected for this survey. As previously stated, they were schools located on Long Island but outside of the central Metropolitan New York area. They were also schools comprising the Health Services Departments in the North Nassau Zone, a health area subdivision of the New York State Department of Education.

The methodology employed was direct telephone interview with the school nurse-teacher in charge of the Health Services Department in each of the twenty-one schools. The decision was made to interview by telephone for the following reasons:

1. An immediate response would be forthcoming.
2. There would be an assurance of a 100 percent response.
3. The interviewee would have an opportunity to elaborate as extensively as she deemed necessary.
4. The opportunity for clarification of the question and the response would be possible for both the interviewer and the interviewee whenever required.

The plan for the initial contact included:

1. Identification of the interviewer by name, title and school.

2. A statement of the purpose: "I plan to develop a health counseling program for the overweight adolescent girl and would like to discuss the possibilities with you."

3. A convenient time question: "Do you have a few minutes to talk with me now?" If no immediate time was available, arrangements were made to call at a time convenient for the interviewee. Only three of the twenty-one school nurse-teachers had to be called at a later date.

The questions considered pertinent for developing a specific health counseling program for the overweight adolescent girl were:

1. What is your student enrollment?

2. How many school nurse-teachers are assigned to the Health Services Department?

3. Do you consider overweight to be a health problem among your students?

4. Have you determined the number of students who are overweight?

5. Do you have a health counseling program for the overweight students?

6. What are the basic techniques used?

7. How many students are involved in your program?

8. How often do you see each overweight student whom you are counseling?

The number of students enrolled in the schools and the number of school nurse-teachers assigned to the schools are shown in Tables 5 and 6 on page 60. Table 7, page 61, lists the number of school nurse-teachers who consider overweight a problem among the students in their individual schools. None of the school nurse-teachers interviewed had conducted a

Table 5

Distribution Of The Number Of Schools Of Various Sizes According To School Enrollment

School Enrollment Number Of Students	Number of Schools
Less than 1,000	2
1,000 to 1,500	8
1,550 to 2,000	6
2,100 to 3,200	5
Total	21

Table 6

Distribution Of School Nurse-Teachers According To School Size

Number Of Students	Number Of Schools	Number Of School-Nurse Teachers	Number Of School-Nurse Teachers Per School
800 to 2,100	11	11	1
1,350 to 2,400	7	14	2
2,700 to 3,200	3	9	3
Totals	21	34	

Table 7

Responses Of School Nurse-Teachers To Questions
On Overweight Problems Among Students

Questions	Yes	No
Is overweight a problem among your students?	21	0
Have you determined the number who are overweight?	0	21
Do you have a weight counseling program?	12	9
What techniques are employed?		
Individual counseling	10	
Group counseling	2	
How frequent are the counseling sessions?		
Once a week	2	
No specific schedule	10	
How many students are involved in the program?	5 - 20 (all girls)	

survey to determine the number of students who were overweight in their individual schools. Table 7 also indicates the number of schools which have health counseling programs for weight control, the techniques used, the number of students involved, and the frequency of the sessions.

The results of this survey revealed that overweight was unanimously recognized by the school nurse-teachers to be a health problem in their individual schools.

Attempts were made in twelve of the individual schools to counsel the overweight students. Distribution of weight control literature, parent conferences, referrals to the psychologist and/or family physician were part of the counseling techniques used. No specifically structured program was in operation in any of the schools. A desire to devote more time to the problem of overweight among the students was expressed by all the school nurse-teachers. The deterring factor appeared to be lack of time, particularly in the schools which employed only one school nurse-teacher. Where the student ratio was less per school nurse-teacher, more health counseling was taking place.

An analysis of the survey and of the level of interest expressed by school nurse-teachers supports the view that there is need for programs to assist overweight girls with their weight problems.

A next step was to explore in depth the type of community from which the adolescent overweight girls came.

COMMUNITY AND SCHOOL DESCRIPTION

In order to obtain information of possible use for development of the health counseling program, a careful review of a recent community and school study was conducted. This study was undertaken from 1964 to 1966

in preparation for the evaluation of North Shore High School by the Middle States Association of Colleges and Secondary Schools. There were eleven faculty members on the committee for this study. They represented eight educational departments: three from the English Department, three from Social Studies, one Guidance Counselor, one Attendance Specialist, as well as one from each of the following areas, Mathematics, Music and Art.

The primary purpose of the study was to better ascertain the nature and needs of the students. The goal was to give as complete a description as possible of the student body, the community or group served by the school, the opportunities for youth, and the expectations of their parents and friends.

By definition, the school community for a public school is the area and population of the district which is legally responsible for the support and control of the school. In this health counseling program pilot study the district was the North Shore Schools Central District Number One located on the North Central Area of Nassau County in the township of Oyster Bay on Long Island.

The North Shore School Central School District includes parts of the Townships of Oyster Bay and North Hempstead and encompasses four communities. The school district contains three elementary schools, a junior high school, and a senior high school with a total district enrollment of 3,297 students at the time of this pilot study. The towns are principally residential in nature, although there are local businesses ranging from small individually owned shops to medium-sized light industry plants. Many of the residents commute to New York City and other industrial or commercial locations on Long Island. The population is considered relatively stable. Socially, the district is categorized as middle class.

Ethnically, it may be considered a melting pot of ethnic groups since its population consists primarily of families of German, Russian, Polish, Spanish, Chinese, Anglo-Saxon and Hungarian extraction as well as a small number of black families.

There is a variety of civic and fraternal organizations, religious denominations and social agencies. For clarification, these groupings are classified as follows:

1. All Community Agencies:
   a. Community Council (overall planning agency), active in researching and publishing reports concerning housing, transportation, etc.
   b. Civic Improvement Association.
   c. Youth Council.
2. Social Services Agencies:
   a. The Salvation Army.
   b. The Red Cross.
   c. The Golden Ring (Senior Citizens' Group).
   d. The Junior Guild.
   e. Church affiliated relief agencies.
3. Religious Organizations:
   a. Catholic, Protestant, Jewish, Russian Orthodox.
   b. Young Men's Christian Association.
4. Agencies Serving Racial or Ethnic Groups:
   a. Lincoln Settlement House serves Negroes living in Glen Cove.
   b. Italian-American and Polish-American groups in Glen Cove.
   c. Norway Hall.
   d. National Council of Christians and Jews.

5. Service Clubs:
   a. The Lions Club.
   b. The Rotary Club.
   c. Northern Country Community Association, active in service to local hospitals.
   d. The American Legion.
6. Fraternal Organizations:
   a. The Elks Club.
   b. The Masons.
7. Women's Organizations:
   a. The American Association of University Women.
   b. Business and Professional Women's Club.

The data obtained from the Nassau County Planning Commission's Field Study indicated that 65.9 percent of the adults in the community are in white collar and executive positions; 30 percent are employed in New York City. The median family income is $9,600.

The educational status of the adults indicated that the median educational level is 12.5 years of formal education. Twenty-one percent have completed four years of college.

In line with the composition of the community, its interests are reflected by the high school. The primary emphasis of the school is academic.

Grades nine through twelve are housed in the high school. Current enrollments for 1971-72 are 286 Freshmen, 330 Sophomores, 302 Juniors, 317 Seniors and 6 in a special class, with a total enrollment of 1,241 students.

The student body is heterogeneous in terms of ethnic and socio-

economic backgrounds, though the majority come from middle-class homes. Pupils are grouped in ability-achievement groups in all required and many high enrollment subjects. Most of the students carry five or more subjects and graduate with more than 20 units of credit.

Substantial programs in Art, Drama and Music supplement the academic program. Approximately one half the student body participates in some performing music group.

Specific vocational education is accomplished in the Business, Industrial Arts, and Homemaking Curricula and related on-the-job learning opportunities are presently enrolled in the Board of Cooperative Educational Services.

Approximately 80 percent of the graduates continue in some post-secondary institution of learning, with 50 percent to 55 percent in four-year colleges.

From the related community and school description, a diverse cultural and ethnic background is apparent in the student body. An awareness and clear understanding of the cultural and religious differences are beneficial in a meaningful health counseling relationship with these students with varying backgrounds. Academic competition is obvious among the student population. This kind of involvement can have considerable physiological and psychological impact on the individual student.

All these factors need to be given much consideration when attempting to counsel the student who is in need of assistance in solving a problem. The concern here is with health-related problems, specifically overweight. However, similar knowledge would be helpful in all phases of counseling.

With a deeper over-all insight at hand into the socioeconomic makeup of the students attending North Shore High School and into selected

aspects of their community, a next step was to inquire into nutritional habits and nutritional knowledge of the high school girls. This kind of information was designed to provide possible implications for instructional purposes as well as health counseling activities. The following section discusses in detail the questionnaire used to obtain the desired information.

NUTRITIONAL HEALTH SURVEY QUESTIONNAIRES

A brief questionnaire entitled Nutritional Health Survey was prepared. The questionnaire was discussed and reviewed with the Chairman of the Home Economics Department prior to its final printing. A sample of the questionnaire appears in Appendix A, page 106.

The questionnaire was pretested on 22 girls ranging in age from 14 to 17 all of whom were in the same physical education class. Through consultation with the Director of Physical Education this particular group was selected for pretesting because the members included a variety of high school age levels.

Arrangements were made for distribution of the questionnaires and for collecting them from every student in the group. There was no expressed time limit set for students' completion of the responses. Students were informed that the purpose of the questionnaire was to survey the nutritional patterns and knowledge of teenage girls. Instructions were as follows:

1. Read each question carefully before answering.
2. Answer the questions as honestly and as accurately as you can.
3. You do not have to sign your name.
4. Turn in the questionnaire as soon as you are finished.

As each questionnaire was returned, it was checked to see that all appropriate questions were answered.

The pretest indicated that the questions were clear and complete except for question number 4. The original question read: How often do you eat snacks (cake, candy, cookies, ice cream, soda, potato chips, etc.)?

once daily _____ twice daily _____ three times daily

none at all _____ (or more) _____

The students felt it was necessary to include the word "sometimes". Therefore, the category "sometimes" was added to the final question.

For the general survey the questionnaire was completed by 105 girls ranging in age from 14 to 18. The same procedure and instructions as used for the pretest were used for them. These girls were enrolled in a variety of courses offered by the Home Economics Department. The questionnaires were distributed during their classes.

This group of girls was chosen because they were conveniently grouped and easily accessible through the Home Economics classes. Their grade levels were nine through twelve with an age range from 14 to 18 years. Their academic achievements extended from below average to above average in accordance with the ability tracking system utilized by North Shore High School.

An analysis of the responses revealed some very significant information. Implications for curriculum modification and health counseling were evident.

Table 8, page 69, demonstrates the breakdown of the number of meals eaten. These findings indicate the following pattern:

28 students eat all three meals daily.

20 students eat breakfast and dinner daily and sometimes lunch.

19 students eat breakfast and lunch sometimes, and dinner daily.

22 students eat breakfast sometimes, and lunch and dinner daily.

Table 8

Frequency Distribution Of Meals Eaten

	Yes	Percent	No	Percent	Sometimes	Percent
Do you eat?						
Breakfast?	48	46	13	12	44	42
Lunch?	60	57	0	0	45	43
Dinner?	98	93	0	0	7	7

Table 9

Frequency Distribution Of Food Selection

	Adequate		Inadequate		Skipped Meals	
	Juice, Cereal Or Egg, Toast Milk		Donuts, Rolls, Juice, Coffee Or Milk			
	Freq.	%	Freq.	%	Freq.	%
Breakfast	41	39	53	50	11	11
	School Lunch (Hot Meal, Salad, Fruit, Milk)		Sandwiches Milk or Soda			
Lunch	16	15	86	82	3	3
	Meat Or Fish, Potatoes, Salad Vegetable, Milk Dessert		Pizza, spaghetti or hot dog or hamburger			
Dinner	82	78	23	22	0	0

9 students do not eat breakfast, but eat lunch and dinner daily.

4 students do not eat breakfast, but eat lunch and dinner sometimes.

2 students eat all three meals sometimes.

1 student eats breakfast and dinner sometimes and lunch daily.

The aforementioned figures were taken from the submitted responses to the questionnaires. They are components of the figures mentioned in Table 8 and represent the number of respondents in the various categories grouped separately.

Out of 105 students responding, only 28 or approximately 26 percent are eating all three meals daily. Dinner appears to be the meal eaten daily by the largest number of students - 98. The most neglected meal is breakfast with 13 indicating they do not eat breakfast and 44 who have breakfast sometimes.

Table 9, page 69, categorizes the kind of food consumed at each meal as adequate, inadequate, meals skipped, and the number of students in each group.

Dinner appears to be the most nutritionally adequate meal consumed by the largest number of students, 82 out of 105. Eighty-six indicate having a lunch comprised of sandwiches. It is interesting to note that those 28 students who indicated they eat three meals daily, also reveal that these meals are most adequate according to nutritional recommendations. Those students who indicate that they do not eat breakfast or eat breakfast sometimes demonstrate the remainder of their meals to consist of high caloric, high carbohydrate diets.

In the area of identification of the four basic food groups, the students scored relatively high. Their responses are recorded in Table 10, page 71.

Table 10

Respondents' Recognition Of The Basic Food Groups
As Indicated By Questionnaire Responses

	Freq.	%*
Liquids (tea, coffee, soda)	34	32
Milk and Cheese	86	82
Bread and Cereals	66	63
Cakes and Pastries	9	9
Vegetables and Fruit	84	80
Meat and Fish	88	84
All Of The Above	17	16
None Of The Above	4	4

*This percentage calculation is based on the frequency divided by 105 which represents the number of questionnaires returned by the respondents.

The snacking pattern of teenage girls at North Shore High School appears to fit in with Burkhart's comments on snacking across the nation by teenage girls.[1]

The frequency and number of students who eat snacks fall into the following pattern:

Once daily	25	(24%)*
Twice daily	32	(30%)
Three times daily (or more)	35	(33%)
Sometimes	5	(5%)
Not at all	8	(8%)

The knowledge of nutritional effects on the psychophysiological aspects of the individual shows marked deviations. Eighty-five respondents, however, indicate that nutrition affects physical activity as compared to only 45 indicating that nutrition affects posture. The total number of responses are demonstrated in Table 11, page 73.

Question 6 of the questionnaire requested the ages, heights and weights of the students. This information is found in Table 12, page 74.

In relation to the age, height and weight of the students, the questions 7 through 9 attempted to find out if they considered themselves overweight, underweight, normal or did not know. These questions revealed a conflicting response as shown by the following data.

Do you think you are overweight? Yes - 64. By 1 to 5 pounds - 23

6 to 10 pounds - 16

11 to 20 pounds - 10

Over 20 pounds - 11

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[1]Audrey C. Burkart, Smarten Up and Snack Right! Here's How To Do It, Yearbook Separate No. 3661, Reprint from Yearbook of Agriculture 1969, (Hyattsville, Maryland, U.S. Department of Agriculture, pp. 273, 275.

*This percent is based on the figure of 105 as mentioned previously.

Table 11

Students' Response To The Impact Of Nutrition
On Personal Characteristics

	Yes		No		Don't Know		
	Freq.	%*	Freq.	%	Freq.	%	Total %
Hair	80	76	8	8	17	16	100
Posture	45	43	29	28	31	29**	100
Skin	79	75	4	4	22	21	100
Personality	51	49	33	31	21	20	100
Physical Activity	85	81	8	8	12	11	100
Learning Ability	60	57	22	21	23	22	100

*Frequency/105

**Superscript indicates number to which it is attached is an approximation resulting from rounding.

Table 12

Distribution Of Respondents' Age,
Height and Weight

Age	Freq.	%	Height	Freq.	%	Weight Lbs.	Freq	%
14	27	25.8	4'11"-5'1"	18	17.1	75-89	2	1.9
15	24	22.8				90-104	16	15.3*
16	28	26.7	5'2"-5'4"	45	42.8	105-119	20	19
17	24	22.8				120-134	42	40.2
18	2	1.9	5'5"-5'7"	37	35.5	135-149	13	12.2
						150-164	4	3.8
Totals	105	100	5'8"-5'10"	5	4.8	165-179	2	1.9
						180-194	4	3.8
			Totals	105	100	195-209	2	1.9
						Totals	105	100

*Superscript indicates rounding approximation.

No - 38 Don't know - 3

Do you think you are underweight? Yes - 9 By 1 to 5 pounds - 3

6 to 10 pounds - 1

11 to 20 pounds - 0

Over 20 pounds - 0

No - 88 Don't know - 8

Do you think your weight is normal for your age and height?

Yes - 42 No - 44 Don't know - 19

Sixty-four responded that they were overweight, 9 underweight, yet only 44 indicated that they did not think their weight was normal for their age and height. This may possibly reflect a psychological implication in that some of these students who answered yes to overweight and underweight may be revealing an underlying desire to be normal. They may not want to be considered abnormal. Possibly, they may consider overweight and underweight as being normal.

The last question dealing with the safest ways to lose weight shows that a large number of the students are aware of the safe methods employed - 85 checked daily exercise and 82 guidance by a medical doctor. The groupings and responses are shown in Table 13, page 76.

An irregularity in eating habits was noted as well as the popularity of snacks. The diets in many instances lack the daily recommended dietary allowances. A large number of the respondents were apparently knowledgeable of what constitutes the four basic food groups, but many do not include these foods in their daily diets.

Judging from the ambiguity of the respondents, the girls in the group do not have a thorough understanding of the relationship of nutrition to good mental and physical health. As previously noted, the student responses re-

Table 13

Students' Response To Safe
Weight Loss Methods

	Number	%*
Reducing Pills	4	4
Daily Exercise	85	81
Crash Diets	2	2
Skip Breakfast	4	4
Guidance By Medical Doctor	82	78
None Of The Above	3	3
All Of The Above	1	1

*Frequency/105.

Table 14

Summary Of Overweight Girls According To Grade

			Percent Of Girls Overweight		
Grade	Freq.	Total Girls/ Grade	Of Given Grade	Of Female School Overweight Population	Of Female School Popula-tion
9	72	140	51	23	11
10	82	175	47	26	13
11	77	145	53	24	12
12	84	175	48	27	13
Totals	315	635		100	

lating to nutritional effects on personal characteristics (Table 11, page 73 varies markedly. Eighty-one percent of the respondents indicated that nutrition affects physical activity, whereas only 43 percent believed nutrition affects posture. In addition, only 49 percent indicated that nutrition has a bearing on personality. There is considerable confusion about what is considered one's normal weight. The answers to the questions concerning weight indicate however, that excessive weight does exist among a relatively large number of these girls. They demonstrate knowledge concerning safe ways of losing weight. Although from studies, personal experiences and observations previously discussed, many young people, especially the teenage adolescent, attempts methods of weight reduction that are not considered safe.

In summary, the results of the questionnaires have revealed significant information which may be effectively utilized in a health counseling and health education program.

A re-educational approach appears to be needed in some instances to clarify misconceptions. At the same time, a broadening and deepening of knowledge in the areas concerning the students' total health is needed. Individualized health counseling can play a vital role in this overall learning process. The information gathered from these questionnaires has served as a useful basis in providing beneficial health counseling for the overweight girl.

Following completion of the nutritional Health Survey, a next step was to determine as precisely as possible the extent of the overweight problem in our school. For this purpose an investigation was conducted of the total female student population. The data from this study are presented as the last phase of the preliminary preparations for developing a health

counseling program for the overweight adolescent girl.

CUMULATIVE HEALTH RECORD

In order to find out the number of girls who were overweight, and the magnitude of the overweight problem in North Shore High School, an analytical study of all the girls' Cumulative Health Records was undertaken. In addition to pertinent health information, these records contain the annual weight, height and age of every student enrolled in the school. Each student's weight, height and age was compared with the Baldwin and Wood Weight-Height-Age Table for Girls. This is a standardized table which is utilized by the American Child Health Association. A sample of this table is found in Appendix B, page 108.

The survey revealed that 315 girls in grades nine through twelve were classified as overweight according to the Baldwin-Wood Weight-Height-Age Table. The total female population in these grades is 635. This represents an overweight figure of approximately 50 percent. The number and percent of these overweight girls according to grades is included in Table 14, page 76.

Observation of this table leads to the conclusion that there is a relatively constant percentage of overweight in each grade which approximates 50 percent of the total and of each female group being considered.

A breakdown of the extent of overweight and the amount of overweight for each grade is shown in Table 15, page 79. With all the overweight cases of 40 pounds or more overweight, 59 percent are in the freshmen class. The statistics also indicate that in all the overweight categories in the freshmen class, 22 percent fall in the 40 pound and up group.

Table 15

Overweight Girls By Amount Overweight
By Grade and Weight

	9			10			11			12			Total		
Wt. Class	Freq.	% In Each Wt. Class	% In Each Grade	Freq.	% In Each Wt. Class	% In Each Grade	Freq.	% In Each Wt. Class	% In Each Grade	Freq.	% In Each Wt. Class	% In Each Grade	Freq.	Wt. Class % of all overweight girls	Wt. Class % Of All Female School Population
0-4	4	7	6	12	21	15	22	39	29	19	33	23	57	18	9
5-9	11	27	15	9	22	11	5	12	6+*	16	39	19	41	13	6
10-14	13	18	18	24	32	29	18	24	23	19	26	23	74	23	12
15-19	8	18	11	15	33	18	12	27	16	10	22	12	45	14	7
20-24	8	27	11	9	30	11	6	20	8	7	23	8	30	10	5
25-29	5	31	7	2	13	2	4	25	5	5	31	6	16	5	3
30-34	4	29-*	6-*	4	28+*	5	4	29-*	5	2	14	2	14	5	2
35-39	3	27	4+*	4	36	5	3	27	4	1	10-*	1	11	3	2
40-Up	16	59	22	3	11	4	3	11	4	5	19-*	6	27	9	4
Total All Wts.	72	23	100	82	26	100	77	24	100	84	27	100	315	100	50

*Superscript indicates rounding approximation.

The highest weight category for the sophomores is in the 10 - 14 pound range with 24 out of a total of 82 in this class who are overweight.

In the Junior class, the 0 - 4 pound range indicates the largest number, 22 out of 77. The seniors show the largest number to be overweight in the 0- 4 pound range as well as the 10 - 14 pound group. There are 19 overweight girls in each category out of a twelfth grade total of 84 overweight girls.

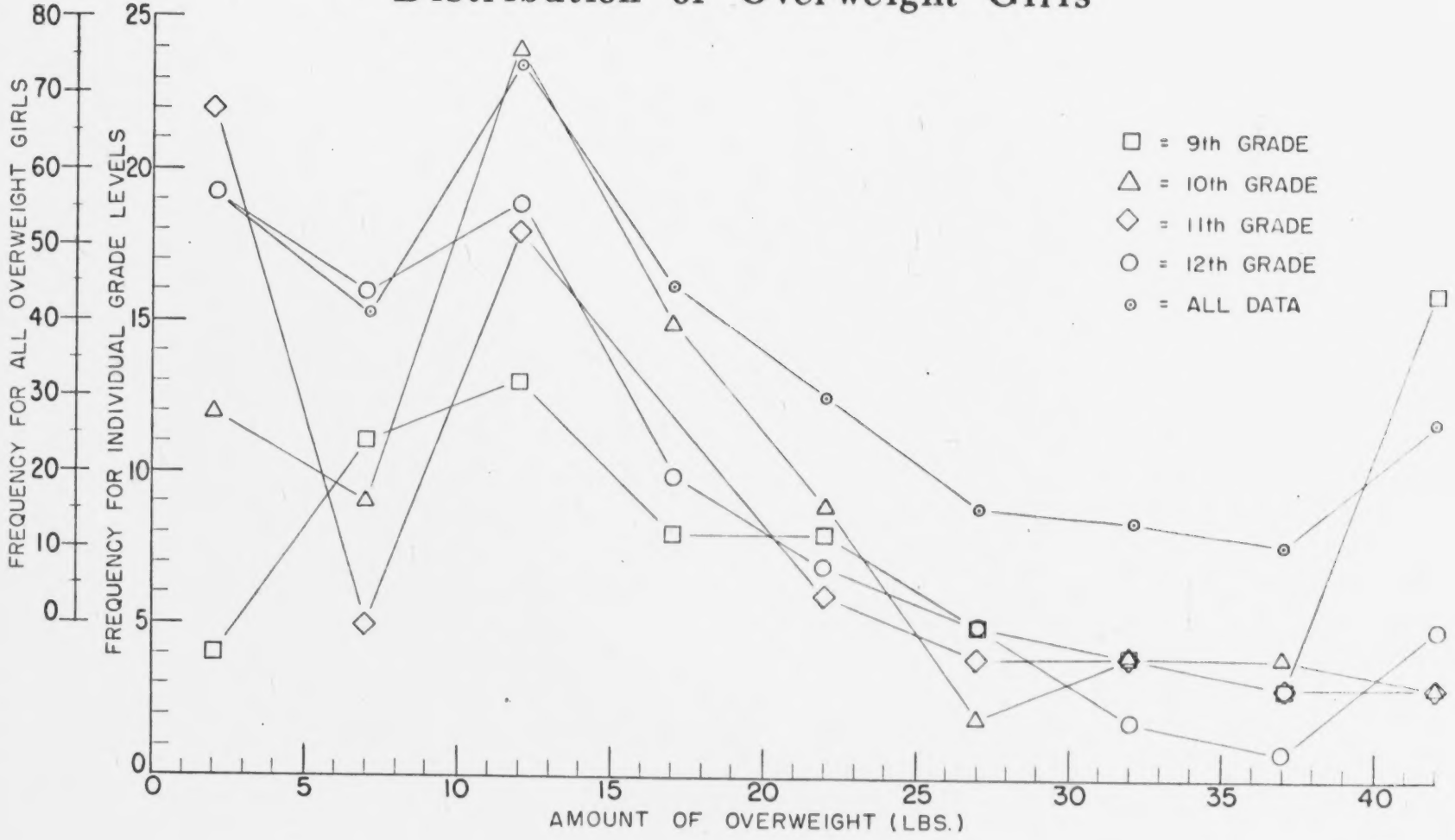
Of all the overweight categories across the grades, the greatest number is shown in the 10 - 14 pound group, representing 23 percent of the overweight female population.

Interestingly, we see a similar and rather close number of overweight girls in each grade level, but the twelfth grade girls appear to have a slightly larger percentage than the lower grades.

For further detail, Figure 2, page 81, gives greater emphasis to what is contained in Table 15. An overall view of this graph shows a general trend as we go from the minimum overweight to the maximum overweight, there tends to be a diminished number who are overweight with notable exceptions.

For example, the freshmen class shows an abnormal number of girls to be overweight in the greatest overweight category. Turning to the low overweight end of the graph, the juniors have the greatest number of overweight girls in the lowest overweight category, but conversely have the least number of overweight in the second overweight class. It is of further interest to note that in the third overweight class, there is in general the greatest number of overweight girls in each grade. In the last four overweight classes it is born out the expected general downward trend in overweight cases. The fact that the number of cases in each grade directly

Figure 2
Distribution of Overweight Girls


FREQUENCY FOR ALL OVERWEIGHT GIRLS
FREQUENCY FOR INDIVIDUAL GRADE LEVELS
AMOUNT OF OVERWEIGHT (LBS.)
□ = 9th GRADE
△ = 10th GRADE
◇ = 11th GRADE
○ = 12th GRADE
⊙ = ALL DATA

coincides for at least two grades in each of the categories shows that this is a confirmed trend.

Conclusively, this overweight cumulative health record study has further emphasized the need for a counseling program for overweight girls. As previously mentioned, 315 girls out of a total of 635 girls or approximately 50 percent are overweight according to Baldwin-Wood national standardized weight-height-age table. The severity of the problem appears to be with the freshmen indicating the greatest number of overweight girls in the highest overweight category. Counseling assistance appears to be strongly indicated at the freshmen level.

Chapter 5

HEALTH COUNSELING PROGRAM FOR THE OVERWEIGHT ADOLESCENT GIRL

This study planned to analyze the extent and sericus implications of obesity, especially as they affect the teenage girl. At this point the multiple, complex psychological and physiological conditions related to obesity have been reported. Indications for positive action aimed at control and prevention have been strongly emphasized. With this information providing a foundation, the next step was the development of an individualized health counseling approach directed primarily at the overweight adolescent girl. The basic objective of the program was to assist the teenage girl in eliminating her excess weight problem.

The extensive research into the prevalence of obesity, the mental and physical implications, and the etiological factors, provided a broad, basic background. The survey of neighboring schools, the composition of the school and community, the information relative to nutritional patterns and knowledge of the students sampled, and lastly, the statistical weight, height and age studies, provided explicit, tangible information relative to the students to be counseled. All this material was essential in preparing the kind of individualized health counseling service to be offered to the overweight adolescent girl.

After identifying and selecting sixteen overweight girls, arrangements were made for their participation in regular counseling sessions. An appropriate individualized regimen for developing a healthy, wholesome daily pattern for living was instituted.

The criteria for selection of these overweight girls, the approach and the techniques employed in the counseling sessions are described in the next section. Also included in the last section of this chapter is the content of the regimen for developing a healthy life style pattern.

REGULAR COUNSELING SESSIONS

Sixteen girls were selected for weight control health counseling. Their selection was based upon several factors. They were all twenty pounds or more over the standardized average weight-height-age table. The girls in this weight category were considered, because it was believed they had the greatest need for help based upon their excessive weight.

Each selected student's personal folder and cumulative health record was carefully reviewed. Conferences followed with the guidance counselors, school psychologist and the school physician. No student manifesting any apparent physiological problems (other than excess weight) or psychological problems was included in this pilot study. The final approval for each girl to participate in the program was determined by the school physician.

Five freshmen, five sophomores, three juniors and three seniors were ultimately chosen. The larger number was selected from the freshmen and sophomore classes because of the possibility of seeing long-term results of the health counseling plan. The opportunity would also be provided to be able to work longer with the freshmen and sophomores and observe their health status throughout their high school career. Moreover, the projected possibility was foreseen of preparing some of them eventually to assist in group sessions so that the program could be

expanded to include a larger number of overweight girls.

These sixteen girls were initially scheduled for their annual health screening appraisals. This procedure consists of testing the students' vision and hearing, and ascertaining their height and weight. At the time of their appointment, the investigator's interest and concern in assisting students in losing weight was stressed. Each student was briefly told what the health counseling plan would entail. Help would be offered to her to re-evaluate her weight problem and assist her in developing a regular, everyday pattern of eating which would provide for a weight loss. In addition, a balanced plan for physical activity would be developed. The rewards of weight loss were emphasized. The primary focus was aimed at appearance and dress. She would feel better, look better and have a wider selection of pretty teenage clothes. She was asked to think about the assistance offered to her and to discuss it with her parents. She was urged to report her decision the following day. She was also assured that privacy and a confidential relationship would exist. It is interesting to note that all sixteen girls were immediately receptive and expressed sincere concern in wanting to do something about their weight problem.

The girls indicated their mothers thought it was a good idea, and that the mothers were pleased that the school nurse-teacher was going to help their daughters try to lose weight.

After the girls reported back, arrangements were made to meet with them individually, at the same time every week. With each girl's knowledge and consent, her mother was contacted by telephone. The parent was familiarized with the health counseling program. The program content was to stress appearance rather than calories, a sensible balance of foods rather than

special foods, diversified interests and physical activities rather than weight. The basic aim was to establish good nutritional habits and a healthy, wholesome pattern of daily living. The parents were encouraged to call or visit whenever they had any questions or suggestions to share relative to their daughter's conferences. During the period of the pilot study, periodic contact was maintained with most of the mothers. An invaluable exchange of suggestions and information took place.

Prior to the first scheduled meeting with each girl, all the personal and health data available about her was again reviewed. Arrangements were made for complete privacy and avoidance of non-emergent interruptions during the counseling sessions. Initial concern was to establish rapport as soon as possible and lay the groundwork for a lasting confidential relationship. The personality adjustment was paramount prior to attacking the weight problem. Empathic reassurance was emphasized through the expression of awareness and concern about the problem of overweight, and a sincere desire was stated to help the person who had such a problem. The extent and prevalence of overweight was discussed. Overweight was pointed out as being a common problem among girls. This was done for the primary purpose of letting the counselee know that she was not alone with her weight problem.

No notetaking was done during the conferences. A written record, however, was made about each student immediately following each session.

The weekly counseling sessions were scheduled during the students' study hall period, except for one girl who did not have any study halls. Conferences with her were scheduled at the end of the school day.

The importance of attending the regular weekly conferences was stressed. A reminder was sent to every girl for the first four weeks via

their homeroom teachers. After the fourth week, it was their decision whether or not they wanted to continue having a reminder sent to them. They all agreed they would remember to keep their appointments and would not need to be notified.

They were also told that if they had another commitment during their assigned time to make it known and the visit would be shortened. It was emphasized, however, that they would be expected to come every week if they wanted to really lose weight and if an accurate record of their progress was to be kept. The sessions, nevertheless, were flexible and the length of each session was generally determined by the student's needs. The maximum time was the forty-five minute class period and the first few sessions involved that whole period for most of the girls. After the fifth week, the time varied depending upon the need and interest of each girl.

At the beginning of the third month, arrangements were made for a group meeting. The suggestion of having a monthly group get-together was discussed with each girl. In addition, the benefits that could be gained from such group meetings were mentioned. They all responded favorably to the suggestion. The commencement with an individual relationship which would move to a group situation was the ultimate goal. It was assumed that as each girl gained a deeper insight into her problem and acquired the necessary attitude and practices for dealing with it, she would become more responsible and her need for individualized guidance and direction would decrease. This plan worked out successfully.

The techniques utilized and the activities involved are described in detail in the Health Counseling Regimen which follows.

REGIMEN FOR DEVELOPMENT OF A HEALTHY PATTERN OF LIVING

The first counseling session was primarily devoted to establishing a mutual confidence between the health counselor and the counselee. Another aim was to encourage free expression by creating a relaxed, informal atmosphere. In this way an awareness of the attitudes, ideas and thoughts of the student was gained. Unobtrusive measures concentrating on facial expression, posture, and appearance, as well as attitude were utilized.

In order to stimulate verbalization as an aid in learning more about the counselee's personality, her depth of understanding and her feelings about excess body weight, the following questions were raised:

1. About how long do you think you have been overweight?
2. In what way do you think being overweight has affected you?
3. What do you think are the causes of your being overweight?
4. Have you ever tried to lose weight? How?
5. Did it work?
6. For how long?

The responses were generally the same. All the girls indicated they had been overweight for several years. They seemed to rationalize the causes with the exception of three who said they didn't really know. Nine indicated that overweight ran in their families. Parents and/or brothers and sisters were overweight. Four associated the onset of their excessive weight gain with previous illnesses, i.e., fractured leg, surgery, communicable disease.

Eight had attempted special diets which were recommended by friends, used by their mothers, or they had seen them in magazines.

Those who attempted these special diets stated they worked for only a short time. For the most part, the girls got tired of them or they had experienced ill effects.

During the first meeting, each girl was given two forms, a five-day Food and Liquid Intake Record, and a five-day Physical Activity Record. Copies of these records appear in the Appendix on pages 114, 115. The girl was asked to list all the foods and liquids and the amounts of each she had consumed daily for a five-day period. She was also asked to record the kind of physical activity and the length of time she did each activity for the same five-day period. An understanding was cultivated of the meaning of a calorie and the relationship between energy intake supplied from foods and energy expenditure utilized by physical activity.

At the following session, the caloric intake and the energy expenditure was calculated. These records were then used as an instructional tool to point out nutritional inadequacies and the poor nutritious high caloric foods which appeared on all the records. Physical activity was limited with all sixteen girls.

Each girl was given a Daily Food Guide, a copy of which is included in the Appendix, page 109. She was also given two lists: (1) Foods You May Eat As Much As You Desire, and (2) Foods To Avoid--also found in the Appendix, page 112. From time to time she was offered selected health related reading materials which are listed under Suggested Readings, page 122.

Discussion centered around the constituents of a well balanced diet, what foods should be eaten daily and why. Knowledge of the kinds of food, cooking and eating pattern in the home was essential. An attempt to retrain eating habits was built around the family style as much as

possible. Emphasis was placed upon eating three regular meals a day, and eating a variety of foods rather than limited special foods. She was familiarized with the Recommended Daily Dietary Allowances considered essential for good health. This guide is found in the Appendix, page 116. To develop new patterns of eating, the practices of smaller portions, eating slowly and masticating food into small pieces were stressed.

A Physical Activity Expenditure Guide, included on page 117 of the Appendix, was given to each student which gave an idea of the amount of calories expended per hour for various types of activities. They were also introduced to a variety of helpful exercises and an understanding of the importance of physical activity in one's daily life. Each student was given the booklet entitled VIM, a complete exercise plan for girls 12 to 18, prepared by the President's Council on Physical Fitness. A copy of this booklet is included in the Appendix. The girls were encouraged to start exercising 10 to 15 minutes on a daily basis and gradually increase the time to approximately one-half hour.

A weekly weight record was kept about each girl. A copy of the record is also included in the Appendix, page 113. Each girl came to understand that losing weight was not easy. It required a strong desire to want to lose weight along with will power and self-control. She also understood that losing weight sensibly and safely would be a gradual process over a period of time. The height and weight of each girl was taken at the second session and recorded on her weekly record. Her weight was compared with Baldwin and Wood's Weight-Height-Age Table, and the desirable amount of weight she should lose was determined. A realistic goal was set for each girl on the basis of a one to one and one-half pound loss per week. She would aim to lose a determined amount of weight

in a six-month period. For girls who were excessively overweight, that is, as much as 40 or more pounds, the total amount of weight to be lost was discreetly avoided. Instead a reachable, realistic goal for a six-month period was set. Significance was placed upon the importance of getting weighed only once a week at the same time on the same scale. This method would provide a true and accurate picture of their progress.

During the subsequent sessions a greater exploration was made into nutritional education, the value of physical activity, personal appearance and development of diversified interests. Of course, the extent of the discussion in each of these areas varied with the needs and interests of each girl. If a girl did not show a loss of a pound a week, the discussion revolved around her daily pattern of activity and eating for that past week. An attempt was made to aid the counselee to understand why she did not reach her goal for that period. Helpful hints were offered which would assist her to accomplish her goal.

As the sessions progressed, the time spent with each girl decreased in most instances. Occasionally, the conversation would center around a personal problem the girl would be having at home, in class or with her classmate. Whenever she appeared harrassed or discouraged, the weight regime was minimized. Instead, she was encouraged to discuss whatever was bothering her. Assurance of empathic understanding of her situation was provided. Moral support and continued encouragement was paramount in the relationship with each girl.

At the beginning of the third month, a group get-together was introduced which continued on a monthly basis. A senior girl, who related well to her peers was asked to be the group facilitator. These group sessions were very well attended and the results encouraging. The girls

discussed freely their mutual problems, exchanged ideas and attempted to help each other by sharing useful hints. The counselor's role was that of a passive listener. Occasionally, however, interjection was required to clarify an inaccuracy or respond to a question.

Out of these group meetings grew a physical activity program. Three times a week after school, these girls went through the series of exercises together which are outlined in the booklet VIM. Each one took her turn leading the group. The counselor participated along with them and was accepted as one of the group who could benefit by physical exercise too.

The intention was eventually to diminish the counselor's role while increasing the development of self-direction with each girl. Presumably, as each girl achieved her desired weight and developed a healthy, wholesome pattern of daily living, she would move on and be able to help her peers who have a similar problem. In each counseling session, the aim was to develop individual self esteem through social reinforcement and supportive reassurance. When a girl had not lost the desired weight for the week or she gained instead of losing, together an attempt was undertaken to find out why and to set a new goal. Bemoaning self-disgust was discouraged; instead the "now" was reinforced. Start now, try hard and next week should show good results.

Sincere interest, encouragement and continuous support were seen as essentials for the success of a meaningful weight control program.

In summary, the following guidelines were followed for a health counseling program for the overweight individual.

1. To alter habitual overeating, analyze the counselee's eating habits early in the program and then develop a new pattern of eating:

a. Eat three regular meals daily.

b. Avoid becoming excessively hungry.

c. Drink four to eight glasses of water daily. Preferably, drink a glass of water before eating.

d. Eat slowly, masticate food well, pause between mouthfuls.

e. Keep busy in order to avoid the temptation of snacking between meals.

f. To satisfy a strong desire for sweets, eat a piece of hard candy or chew sugar-free gum.

2. Stress eating a variety of foods built around the four basic food groups.

3. Express nutritional education as essential to good health. Establish a clear understanding of food values, the relationship between food consumption and energy expenditure.

4. Emphasize the choice of foods in conjunction with all the other health factors, i.e., adequate sleep, physical fitness, diversified interests. Encourage choice of low calorie foods and stress avoidance of fats, sauces, fried foods, fatty meats, pastries, cookies, candy and sweetened beverages.

5. Since girls are particularly interested in clothing, include in the counseling approach consideration of fashion and good grooming.

6. Create the understanding that there is no easy, quick way to lose weight. Losing weight is a slow, steady process.

7. Assist in planning a physical activity pattern for each girl by helping her set aside a regular period each day for exercise, anytime that it is convenient for the individual--however, not until at least one hour after eating. Encourage walking whenever possible.

8. Set a desirable, safe and realistic goal for weight loss. Help the individual to accept herself as a person. Identify her strong points as well as her weak ones. Provide her with understanding, reassurance and empathic support.

Chapter 6

RESULTS OF A SIX-MONTH STUDY

The results of the six-month health counseling program for the sixteen overweight girls chosen for this pilot study showed a total weight loss of 224 pounds. A complete table, Table 16, depicting the grade, age, height, average weight, actual weight, pounds overweight, six-month weight loss goal, and the weight at the end of six months, appears on page 96.

The greatest amount of weight loss occurred between the third and fourth week of the counseling sessions. A strong desire to lose weight and an initially high degree of motivation appeared to be present at that time.

A fluctuating pattern of weight loss and gain during the first few weeks was evidenced with ten girls. The weight loss ranged from one-half pound per week to two pounds and an increase of one to two pounds weekly with four of the girls returning to their original weight at one point. After the eighth week, a more stabilized pattern was observed with a gradual decrease in weight. The fluctuation may possibly have been due to attempts at altering individual eating habits which later became more consistent.

A weight increase was observed with six girls over a ten-day holiday period. There seemed to be less physical activity and increased snacking during that time.

Table 16

Characteristics Of Overweight Group
Receiving Health Counseling

Grade	Age	Height	Weight Average	Weight Actual	Pounds Overweight	6 Mos. Goal	Weight At End Of Six Mos.
9	14	65	121	176	55	152	168
	14	65	121	148	27	124	122
	14	64	117	151	34	127	139
	14	64½	119	192	73	168	192
	14	69	135	196	61	172	190
10	15	64	119	145	26	122	129
	16	62	115	146	31	122	122
	15	63	116	150	34	126	126
	15	70	138	166	28	142	147
	15	62½	114	153	39	129	143
11	16	65	123	203	80	179	195
	16	63	117	150	33	126	140
	16	64	120	146	26	122	129
12	17	63¼	120	150	30	126	126
	17	62	117	150	33	126	136
	18	65½	128	164	36	140	164

At the end of the six-month period, four girls reached their weight loss goal with one girl losing two pounds more than her goal. Six girls ranged from five to seventeen pounds from their desired goal with two girls whose weight remained the same at the end of the six months. It was apparent that where the mothers were sincerely concerned and cooperative in working with the health counselor and their daughters, the weight loss results were better. This was particularly true with the four girls who achieved their goals.

In spite of the fact that the remaining girls did not reach their desired goals, they all showed a weight loss with the exception of the two whose weight remained the same. The benefits derived from this structured individualized health counseling approach were further validated by the example of the control group who were not part of the counseling program.

The sixteen overweight girls in the control group were weighed at the beginning of the six-month period. They were again weighed at the end of the six months. Their weights are shown in Table 17, page 98. These girls also were twenty pounds or more over the average weight according to the Baldwin-Wood Weight-Height-Age Table. They showed a total weight gain of 76 pounds in the six-month period. Two girls' weights remained the same and one girl lost three pounds.

The magnitude of the downward change in weight of the counseled group can be seen as one examines the distance between the beginning and end of the arrows in Figure 3, page 99.

For the control group, which did not receive counseling, Figure 4, page 99, demonstrates a weight increase in every case except three. In those three cases, the weight went down for one and remained the same for two.

Table 17

Characteristics Of Overweight Control Group*

Grade	Age	Height	Weight Average	Weight Actual	Overweight	Weight End Of Six Months	Weight Gain
9	14	59¼	97	171	74	189	18
	14	63¼	110	134	24	134	0
	14	63½	97	122	25	136	14
	14	58	92	131	39	134	3
	14	64	117	136	19	145	9
10	15	67	131	153	22	158	5
	15	62½	114	135	21	135	0
	15	65	122	150	28	157	7
	15	64¼	120	141	21	143	2
	16	62	115	139	24	140	1
11	16	64	120	147	27	149	2
	16	61¼	113	144	31	147	3
	16	65½	126	146	20	143	(-3)
12	17	59¼	105	137	32	141	4
	17	64	122	147	25	153	6
	17	60	109	130	21	132	2
							Total = 76

*Group Not Receiving Health Counseling.

Figure 3
Weight Change of Girls in Counseled Group

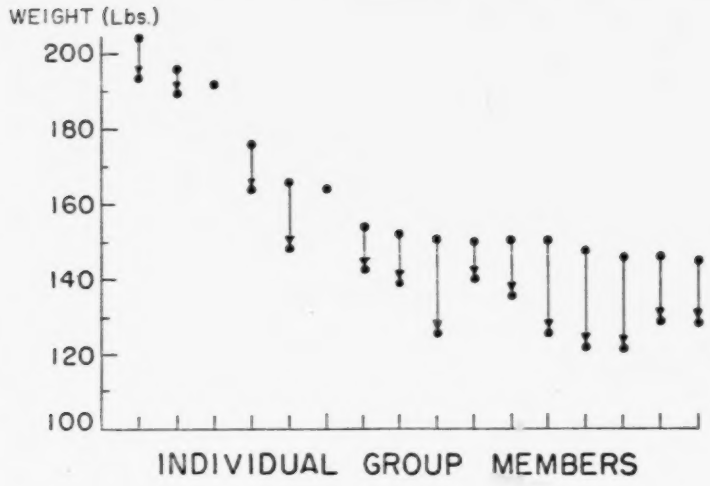
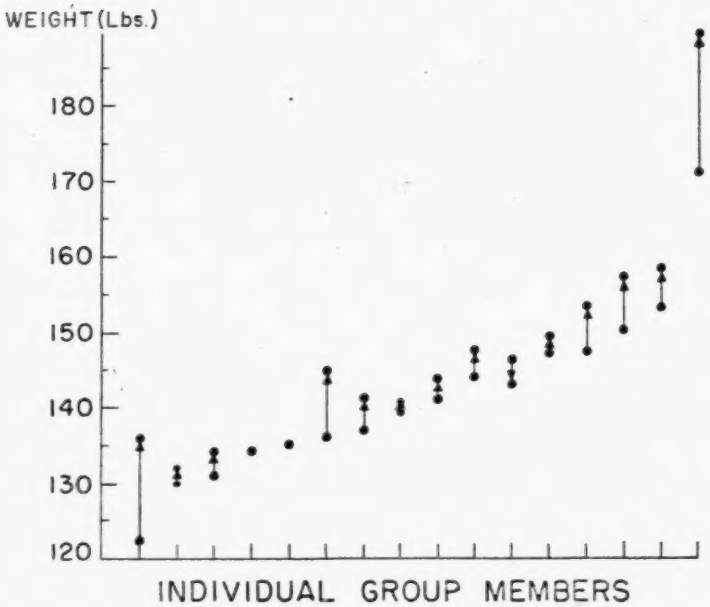


Figure 4
Weight Change of Girls in Control* Group



* UNCOUNSELED GROUP

With the exception of the two girls who remained the same, the counseled group in every case lost weight.

Close observation of each girl over the six-month period has revealed an improvement in personal appearance. An increasing personal concern about complexion, hair styling and overall appearance was evident. Arrangements were made for them at the end of the third month to attend a grooming conference. They were all very impressed with the speaker and felt she had given them many helpful hints toward personal improvement.

A marked attitudinal change was noted from their original reluctance and embarrassment to be weighed during the first two or three sessions. Since then, weighing weekly has become a matter of course with no apparent discomfort. During the beginning period of the counseling sessions, several of the girls rationalized their lack of weight loss or slight weight increase because of menses, fluid retention etc. Since then, a more realistic attitude has developed. Instead, they are analyzing why they may have put on an extra pound or did not lose any weight during the previous week. They usually ascribed their downfall to snacking on high caloric foods along with insufficient exercise.

During the early group meetings, there was considerable inhibition toward verbalization. However, these meetings eventually developed into a relaxing, meaningful conversational exchange between all the girls. They were anxious to offer helpful suggestions to each other. The atmosphere became one of interest, receptivity and informality.

In general, the overall results of this six-month study on Health Counseling for the overweight adolescent girl show that the program has been successful. The primary objective was accomplished. That is, weight loss was evident, although the anticipated amount of each individual's

loss was not attained except for four of them. Nevertheless, a weight decrease pattern has been projected, and if indicated extrapolations are born out, it should continue in that direction.

Attitudinal change has been favorable. Self-acceptance, acknowledgement of a weight problem and a desire to do something about it has been encouraging. The possibilities for expansion of such a health counseling service by concerned and knowledgeable school personnel are numerous. In the conclusion of this study, some of the possible implications are presented.

IMPLICATIONS

Since the inception of the Health Counseling program for the overweight adolescent girl, considerable interest has been stimulated in the school's multiple educational departments. In addition, eight overweight girls have voluntarily requested assistance in losing weight. They had heard about the counseling conferences from their friends who were in the program. Two more girls were referred by their counselors who felt they had a weight problem. No one has been denied assistance. The Home Economics Department has utilized the information obtained from the nutritional health survey questionnaires for their curriculum expansion. The chairman of the Home Economics Department has stimulated interest in nutrition and weight control in one of her all male classes. She has continued to work with students individually for overweight and underweight conditions.

In the girls' Physical Education classes, a body profile and exercise plan has been introduced. The girls are evaluated for their posture and body carriage. Specific suggestions and individualized

plan of exercises have been offered to them. The exercises utilized by the weight control group as outlined in the publication VIM have also been introduced into the girls' Physical Education classes.

Extending beyond the student population, three faculty members who were concerned about their weight problem have asked for assistance. As this study indicates, there is a pronounced concern with being overweight. The overweight individual needs help and is willing to accept it when provisions are made for it.

Such a program as the one described in this study is just a beginning. However, it can provide a new kind of framework for all school health services in cooperation with all the other educational services. A variety of positive approaches and creative innovations can be developed from the basic foundation offered here. With relatively few modifications, overweight boys can be included in the overall program. There is great need for weight control counseling at the Junior High School level and even more so in the elementary grades during the early stage of development. Various studies have indicated that correction of a weight problem in its early stages is more promising and carries with it a more lasting effect.

For the best results, emphasis should be placed upon prevention. The ideal time then would be during infancy and the early years of childhood. In order to achieve the optimum degree of success, the parents should be actively involved in any kind of counseling and guidance program offered.

Considerable caution and discretion is essential on the part of the individual offering health counseling assistance for the overweight. Whenever indications of deep emotional conflict are present, that indivi-

dual should be referred for proper psychological evaluation. In like manner, all physiological abnormalities, excluding overweight, should be ruled out by a medical authority prior to tackling the weight problem. Attempts should also be made to refer the very obese individual to a medical doctor. However, in this particular study, two excessively overweight girls were counseled. These girls had gone to doctors in the past for their weight problems. They did not want to return to their respective doctors at this time.

SUMMARY

This study has reported the results of an investigation by a school nurse-teacher into the problem of obesity. Included are the processes the school nurse-teacher followed in developing a pilot health counseling program for selected overweight adolescent high school girls in a secondary school located in the Long Island suburban section of the New York City Metropolitan area.

Initially, the study developed out of the school nurse-teacher's awareness and concern for the problem of obesity among teenage girls, especially those in the secondary school, a group possibly accessible to a planned program of health counseling within the high school.

To provide a strong background for use in both planning and executing a health counseling program, the study reviewed the health literature dealing especially with several topics:

1. The prevalence of obesity.
2. The relationship of obesity to mental and physical health.
3. The influence of food faddisms and quackery on obesity.
4. The etiology of obesity including hereditary, endocrine, metabolic, environmental and psychological factors.

In addition, the study involved a survey of school nurse-teacher health counseling programs in schools within the administrative area established for health programs by the New York State Department of Education.

To provide information about the general social and communal context of the adolescent girls to be included in the health counseling program, the study drew on the summary of community characteristics provided by an eleven-member North Shore High School Faculty Committee in preparation for the school's evaluation by the Middle States Association of Colleges and Secondary Schools.

From the information about the problem of obesity and the scarcity of school health counseling programs, the school nurse-teacher with the cooperation of members of the Physical Education, Home Economics and Guidance Departments as well as the Psychological and Medical Services, devised a six-month pilot health counseling program.

The program included a careful selection of sixteen overweight girls who were twenty or more pounds over their desired weight according to the Baldwin-Wood standardized Weight-Height-Age Table. Further selection was dependent upon their desire to lose weight, freedom from apparent physiological and psychological problems, excluding overweight, and as a final step the approval by the school physician of each girl.

Parental involvement was part of the program. Weekly individual counseling sessions followed by monthly group meetings were established. A physical exercise program came about as an outgrowth of the monthly group meetings. The girls desiring to participate in the exercise regimen met on a voluntary basis three days a week at the end of the school day.

The individual weekly sessions were flexible and were based upon

the expressed needs of each overweight counselee. The primary focus centered around appearance and dress with the basic aim to establish good nutritional habits and a healthy, wholesome pattern of daily living. Nutritional education, retraining of eating habits, stimulation of diverse interest and encouragement of physical activity formed the nucleus of the counseling sessions.

Social reinforcement and supportive reassurance were paramount in the relationship between the health counselor and counselee.

The results of the six-month pilot study showed an overall weight loss of 224 pounds among the sixteen counseled girls as contrasted to a weight increase of 76 pounds among the sixteen uncounseled group.

An improvement in personal appearance, attitudinal realism of her weight problem, along with self-acceptance, were evident with the counseled group.

The results of this pilot study have implications both within the high school and beyond. Programs based upon the design offered in this study could be extended throughout the community starting in the elementary schools and reaching out into the community health agencies.

The study shows that a thoroughly informed school nurse-teacher by means of detailed planning and program execution is in a strategic position to offer her expertise in assisting the student with a weight problem.

If additional studies beyond this pilot study bear out the results of this study, then adequately prepared health counseling programs can serve as one means of prevention and control of the problem of overweight among the high school students.

APPENDIX A

NUTRITIONAL HEALTH SURVEY
QUESTIONNAIRE

Date

1. Do you eat

	YES	NO	Sometimes
Breakfast?			
Lunch?			
Dinner?			

2. If your answers are yes or sometimes (to question 1) fill in what you usually eat for

BREAKFAST _____

LUNCH _____

DINNER _____

3. Check the food groups you think make up a daily balanced diet.

a. Liquids (tea, coffee, soda)
b. Milk and Cheese
c. Bread and Cereals
d. Cakes and Pastries
e. Vegetables and Fruit
f. Meat and Fish
g. All of the above
h. None of the above

4. How often do you eat snacks (cake, candy, cookies, ice cream, soda, potato chips, etc.)?

once daily ____ twice daily ____ three times daily (or more) ____

sometimes ____ none at all ____

5. Does nutrition affect the following?

	yes	no	don't know
a. hair			
b. posture			
c. skin			
d. personality			
e. physical activity			
f. learning ability			

Please turn to next page

6. Fill in your age: _____ height _____ weight: _____ pounds_____

7. Do you think you are overweight?

YES _____ by 1 to 5 lbs _____ 6 to 10 lbs _____ 11 to 20 lbs. _____
Over 20 lbs. _____

NO _____ DON'T KNOW _____

8. Do you think you are underweight?

YES _____ by 1 to 5 lbs. _____ 6 to 10 lbs. _____ 11 to 20 lbs. _____

NO _____ DON'T KNOW _____

9. Do you think your weight is normal for your age and height?

YES _____ NO_____ DON'T KNOW _____

10. Check what you think are the safest ways to lose weight.

a. reducing pills
b. daily exercise
c. crash diets
d. skip breakfast
e. guidance by medical doctor
f. none of the above
g. all of the above

APPENDIX B

Table 14 Weight-Height-Age
Table For Girls*

Height Inches	5 Yrs.	6 Yrs.	7 Yrs.	8 Yrs.	9 Yrs.	10 Yrs.	11 Yrs.	12 Yrs.	13 Yrs.	14 Yrs.	15 Yrs.	16 Yrs.	17 Yrs.	18 Yrs.
38	33	33												
39	34	34												
40	36	36	36											
41	37	37	37											
42	39	39	39											
43	41	41	41	41										
44	42	42	42	42										
45	45	45	45	45	45									
46	47	47	47	48	48									
47	49	50	50	50	50	50								
48		52	52	52	52	53	53							
49		54	54	55	55	56	56							
50		56	56	57	58	59	61	62						
51			59	60	61	61	63	63						
52			63	64	64	64	65	67						
53			66	67	67	68	68	69	71					
54				69	70	70	71	71	73					
55				72	74	74	74	75	77	78				
56					76	78	78	79	81	83				
57					80	82	82	82	84	88	92			
58						84	86	86	88	93	96	101		
59						87	90	90	92	96	100	103	104	
60						91	95	95	97	101	105	108	109	111
61							99	100	101	105	108	112	113	116
62							104	105	106	109	113	115	117	118
63								110	110	112	116	117	119	120
64								114	115	117	119	120	122	123
65								118	120	121	122	123	125	126
66									124	124	125	128	129	130
67									128	130	131	133	133	135
68									131	133	135	136	138	138
69										135	137	138	140	142
70										136	138	140	142	144
71										138	140	142	144	145

*Prepared by Bird T. Baldwin and Thomas D. Wood, Department of Health Education and Welfare.

APPENDIX C

Daily Food Guide

Meat Group

Foods Included

Beef; veal; lamb; pork, variety meats, such as liver, heart, kidney.

Poultry and eggs. Fish and shellfish. As alternates--dry beans, dry peas, lentils, nuts, peanuts, peanut butter.

Amounts Recommended

Choose 2 or more servings every day. Count as a serving: 2 to 3 ounces of lean cooked meat, poultry, or fish--all without bone; 1 egg; ½ cup cooked dry beans, dry peas, or lentils; 2 tablespoons peanut butter may replace one-half serving of meat.

Vegetable-Fruit Group

Foods Included

All vegetables and fruits. This guide emphasizes those that are valuable as sources of Vitamin C and Vitamin A.

Sources of Vitamin C

Good sources--Grapefruit or grapefruit juice; orange or orange juice; cantaloup; guava; mango; papaya; raw strawberries; broccoli; brussel sprouts; green pepper; sweet red pepper.

Fair sources--Honeydew melon; lemon; tangerine or tangerine juice; watermelon; asparagus tips; raw cabbage; collards; garden cress; kale; kohlrabi; mustard greens; potatoes and sweetpotatoes cooked in the jacket; spinach; tomatoes or tomato juice; turnip greens.

Sources of Vitamin A

Dark-green and deep-yellow vegetables and a few fruits, namely: apricots, broccoli, cantaloup, carrots, chard, collards, cress, kale, mango, persimmon, pumpkin, spinach, sweetpotatoes, turnip greens and other dark-green leaves, winter squash.

Amount Recommended

Choose 4 or more servings every day, including:

1 serving of a good source of Vitamin C or 2 servings of a fair source.

1 serving, at least every other day, of a good source of Vitamin A. If the food chosen for Vitamin C is also a good source of Vitamin A, the additional serving of Vitamin A food may be omitted.

The remaining 1 to 3 or more servings may be of any vegetable or fruit, including those that are valuable for Vitamin C and for Vitamin A.

Count as 1 serving: ½ cup of vegetable or fruit; or a portion as ordinarily served, such as 1 medium apple, banana, orange, or potato, half a medium grapefruit or cantaloup, or the juice of 1 lemon.

Milk Group

Foods Included

Milk--fluid whole, evaporated, skim, dry, buttermilk. Cheese--cottage; cream; cheddar-type, natural or process. Ice cream.

Amounts Recommended

Some milk every day for everyone.

Recommended amounts are given below in terms of 8-ounce cups of whole fluid milk:

Children under 9 . . . 2 to 3	Adults. . . . . 2 or more
Children 9 to 12 . . . 3 or more	Pregnant women. . . . 3 or more
Teen-agers . . . . . 4 or more	Nursing mothers . . . 4 or more

Part or all of the milk may be fluid skim milk, buttermilk, evaporated milk, or dry milk.

Cheese and ice cream may replace part of the milk. The amount of either it will take to replace a given amount of milk is figured on the basis of calcium content. Common portions of cheese and of ice cream and their milk equivalents in calcium are:

1-inch cube cheddar-type cheese	=	½ cup milk
½ cup cottage cheese	=	1/3 cup milk
2 tablespoons cream cheese	=	1 tablespoon milk
½ cup ice cream	=	¼ cup milk

Bread-Cereal Group

Foods Included

All breads and cereals that are whole grain, enriched, or restored; check labels to be sure.

Specifically, this group includes: breads; cooked cereals; ready-to-eat cereals; cornmeal; crackers; flour; grits; macaroni and spaghetti; noodles; rice; rolled oats; and quick breads and other baked goods if made with whole-grain or enriched flour. Bulgur and parboiled rice and wheat also may be included in this group.

Amounts Recommended

Choose 4 servings or more daily. Or, if no cereals are chosen, have an extra serving of breads or baked goods, which will make at least 5 servings from this group daily.

Count as 1 serving: 1 slice of bread; 1 ounce ready-to-eat cereal; ½ to 3/4 cup cooked cereal, cornmeal, grits, macaroni, noodles, rice or spaghetti.

Other Foods

To round out meals and meet energy needs, almost everyone will use some foods not specified in the four food groups. Such foods include: unenriched, refined breads, cereals, flours; sugars; butter, margarine, or other fats. These often are ingredients in a recipe or added to other foods during preparation or at the table.

Try to include some vegetable oil among the fats used.

From Nutrition, Food at Work for You, U.S. Department of Agriculture (revised, 1971) Washington: Government Printing Office, 1971.

APPENDIX D

Foods You May Eat As Much As You Desire

Asparagus
Beans (green or waxy)
Brussel Sprouts
Carrots
Cabbage
Cauliflower
Celery
Cucumber
Lettuce
Mushrooms
Onions
Parsley
Parsnips
Peppers
Pickles
Pumpkin
Radishes
Sauerkraut
Spinach
Squash
Turnips
Watercress

For in-between fillers you may eat most fresh fruits (orange, grapefruit, cantaloupe, honeydew melon, apple, grapes, peach, plum, apricot). You may also include cooked fruits canned in water.

Foods To Avoid

Fats, rich dressings, gravies, sauces, fried foods, pastries, sweets, sweetened drinks.

APPENDIX E

WEIGHT RECORD

Weight Loss Goal _____

Name _____ Grade _____

Date	Ht.	Wt.	Date	Wt.

APPENDIX F

Five Day Food and Liquid Intake Record

Date					
Day					
	Amt.	Amt.	Amt.	Amt.	Amt.

(Include amount of water your drink)

APPENDIX G

Five Day Physical Activity Record

Date					
Day					
	Min.	Min.	Min.	Min.	Min.

(Include all types of physical activity - i.e. walking, running, bicycling, tennis, etc.)

APPENDIX H

Recommended Daily Dietary Allowances (a) Revised 1968
For Girls Age 12 to 18

							Fat-Soluble Vitamins			Water-Soluble Vitamins							Minerals			
							Vitamin A Activity	Vitamin D	Vitamin E Activity	Ascorbic Acid	Folacin d	Niacin e	Riboflavin	Thiamin	Vitamin B_6	Vitamin B_{12}	Calcium CA	Phosphorus P	Iodine I	Iron FE	Magnesium MG
Age (c) years	Weight kg	Weight lb	Height cm	Height in	Calories kcal	Protein gm	iu	iu	iu	mg	mg	mg	mcg	mcg	mcg	mcg	mg	mg	mcg	mg	mg
12-14	44	97	154	61	2300	50	5000	400	20	45	.4	15	1400	1200	1600	5	1300	1300	115	18	350
14-16	52	114	157	62	2400	55	5000	400	25	50	.4	16	1400	1200	1800	5	1300	1300	120	18	350
16-18	54	119	160	63	2300	55	5000	400	25	50	.4	15	1500	1200	2000	5	1300	1300	115	18	350

(a) Based on Table in Recommended Dietary Allowances, Revised 1968, Food and Nutrition Board, National Research Council.

(b) The allowance levels are intended to cover individual variations among most normal girls as they live in the United States under usual environmental stresses. The recommended allowances can be attained with a variety of common foods, providing other nutrients for which human requirements have been less defined.

(c) Entries represent allowances for the midpoint of the specified age range i.e. line for girls 12-14 represents age 13.

Abbreviations used:
kg - kilograms
lb - pounds
cm - centimeters
in - inches
gm - grams
iu - international units
mg - milligrams
mcg - micrograms

("Adapted from" the RDA)

APPENDIX I

Physical Activity Expenditure Guide

Type of Activity	Calories Per Hour
Sedentary Activities:	
Reading; writing; watching TV or movies; eating; typing; playing cards; other activities done while sitting that require little or no arm movement.	80 to 100
Light Activities:	105 to 160
Badminton; walking slowly; preparing and cooking food; washing dishes; laundering; ironing; personal care; miscellaneous office work and other activities done while standing that require some arm movement.	
Moderate Activities:	
Volleyball; canoeing; walking moderately fast; house cleaning; making beds; light gardening; other activities done while sitting that require more vigorous arm movement.	165 to 240
Vigorous Activities:	
Archery; basketball; bowling; golfing; gymnastics; ice skating; softball, table tennis; rowing; walking rapidly.	245 to 350
Strenuous Activities:	
Bicycling; hockey; swimming; running; skiing; dancing; soccer; horseback riding; football, tennis	355 to 800+

Adapted from The Home and Garden Bulletin No. 74, U.S. Department of Agriculture (Washington: Government Printing Office, 1964).

VIM

A COMPLETE EXERCISE PLAN FOR GIRLS 12 to 18

PREPARED BY THE
PRESIDENT'S COUNCIL
ON PHYSICAL FITNESS

OTHER PUBLICATIONS BY THE PRESIDENT'S COUNCIL ON PHYSICAL FITNESS:

ADULT PHYSICAL FITNESS (a home exercise plan for men and women). Price: 35 cents a copy, $26.25 a hundred.

YOUTH PHYSICAL FITNESS (suggestions for school programs). Price: 40 cents a copy, $30.00 a hundred.

PHYSICAL FITNESS ELEMENTS IN RECREATION (suggestions for community programs). Price: 25 cents a copy, $18.75 a hundred.

VIGOR (a complete exercise plan for boys 12 to 18). Price: 25 cents. $18.75 a hundred.

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C., 20402 - Price 25 cents

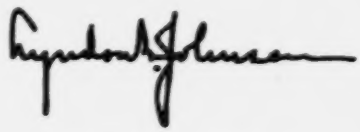
PRESIDENTIAL MESSAGE

Experience has taught me that regular exercise, proper diet and adequate rest and relaxation are essential to good health. I swim twice daily; I enjoy walking in the outdoors.

Physical activity provides relief from tension, and it also builds the strength and endurance all of us need.

The President's Council on Physical Fitness has prepared this booklet as a guide to help you develop a strong, healthy and attractive body. I urge you to read it and use it.

America's young men and women are taller, heavier and healthier than ever before. They can be the most energetic and productive citizens in the world. This is a challenge which I know each of you will want to help meet.



LYNDON B. JOHNSON

WHY PHYSICAL FITNESS IS IMPORTANT TO YOU

You probably spend a lot of time thinking about what you will be when you are grown. Teacher, artist, housewife, businesswoman, designer—there are many possibilities. But no matter what you decide to do, you also will want to be a person who:

- Presents an attractive appearance.
- Radiates confidence and good health.
- Is skillful and energetic.
- Has many friends and interests.

Now, while you still are growing and maturing, is the time to begin developing these qualities. The foundation on which to build is a

strong, healthy, active body. All of your objectives will be easier to reach if you are physically fit.

This booklet is especially designed to help you improve your appearance, strength, stamina and coordination. It explains in simple terms how exercise can help you look better, feel better and perform better.

If you take part in a daily school physical education program, you may be getting enough exercise already. This booklet explains why you should continue to exercise after your school years are completed, and it contains a basic workout which you will be able to use.

If you don't get enough exercise at school or in sports, you should start using the basic workout now. It takes only a few minutes a day and requires no special equipment.

The booklet also includes tips on:

- How you can develop a trimmer, firmer figure and maintain it throughout life.
- How diet, rest, posture and personal habits relate to physical fitness.
- How to check your physical fitness.

People who are attractive, vigorous and successful do not develop these qualities by accident. It requires planning. It also requires self-discipline and hard work. But the knowledge that you are becoming the person you want to be is worth the effort—many times over—and you can start on your way right now.

SOME FACTS ABOUT PHYSICAL FITNESS

What it is

Physical fitness is the ability to continue effort and perform well over a period of time. This ability requires good health, strength, stamina and skill.

If you are physically fit, you will be able to do your schoolwork and perform your other duties without becoming unduly tired, so that you have abundant energy left for enjoying recreation and hobbies. You also will look better and perform better mentally.

Your mind will be more active and alert, and your body will be trimmer and more graceful. Your personality will be bolstered by new interests, confidence and enthusiasm.

Physical fitness is the result of many factors—good medical and dental care, proper nutrition, adequate rest and relaxation and sensible personal habits.

But these are never enough. An essential factor is regular physical activity—exercise for a body that needs it to function well.

Why exercise?

Your body contains more than 600 muscles. By the time you are 12 years old it is more than one-third muscle.

All of us know that ordinary movements—things like running, jumping and bending—are made possible by muscles. Muscles also do many other things. They suck air into your lungs, push food along your digestive tract and tighten your blood vessels to raise blood pressure when you need more pressure for an emergency. Your heart is a muscular pump.

When young muscles are not used, or are not used enough, they do not develop and grow properly. They soon become flabby and weak, shrink in size and lose the ability to do the jobs they were meant to do.

Recent studies showed that the average high school student spends 15 to 30 hours a week watching television and only two hours a week in organized play or exercise. That is one reason why one-third of the 200,000 pupils tested for the President's Council on Physical Fitness failed a simple test of strength, stamina and flexibility. Some of the boys and girls could not raise themselves to a sitting position without using their hands!

Cars and buses, elevators and escalators, TV and push-button machines all tend to reduce strenuous physical activity. But our bodies still need exercise. Without it they soon become weak, ineffective and unattractive.

Some special rewards

We usually think of exercise as a way of strengthening the muscles. That is just one of the many ways it helps you. Regular exercise also strengthens the heart and the lungs. Your heart beat grows stronger and steadier and your breathing becomes deeper.

By increasing the flow of the blood exercise aids in the removal of wastes and helps lessen complexion problems.

Here are some of the benefits you can expect if you follow a regular exercise schedule:

- Improved posture and appearance.
- More flexible joints and greater elasticity of muscles.
- More energy for both physical and mental tasks.
- Improved strength, endurance and coordination.

A word about weight

Overweight is a common problem for teen-age girls today. Lack of exercise, between-meals snacks and rich desserts all add up, and what they add up to often are ugly bulges and rolls of fat.

If you have a weight problem, exercise can help you solve it.

An excess of 100 calories a day (the amount contained in eight ounces of a carbonated drink) can produce a 10-pound gain in a year. Yet, it could be burned up by a 15- to 20-minute daily walk. *The answer, then, is not to let yourself get fat in the first place!*

Some girls skip breakfast or avoid nourishing foods in the mistaken belief that this will keep them trim. It is far better to eat properly and get plenty of exercise. Both are essential for good health, clear skin and a trim figure.

If you do need to lose weight, do so gradually. A pound a week is about right. Ask your health teacher or your doctor about a safe diet. Follow it faithfully and exercise regularly. The weight you lose will be a weight off your mind as well as your body, and you will be a far more attractive person.

Exercise and the heart

At your age you are not worried about having a heart attack. You shouldn't be, but now is the best time to begin building insurance against a heart attack later in life.

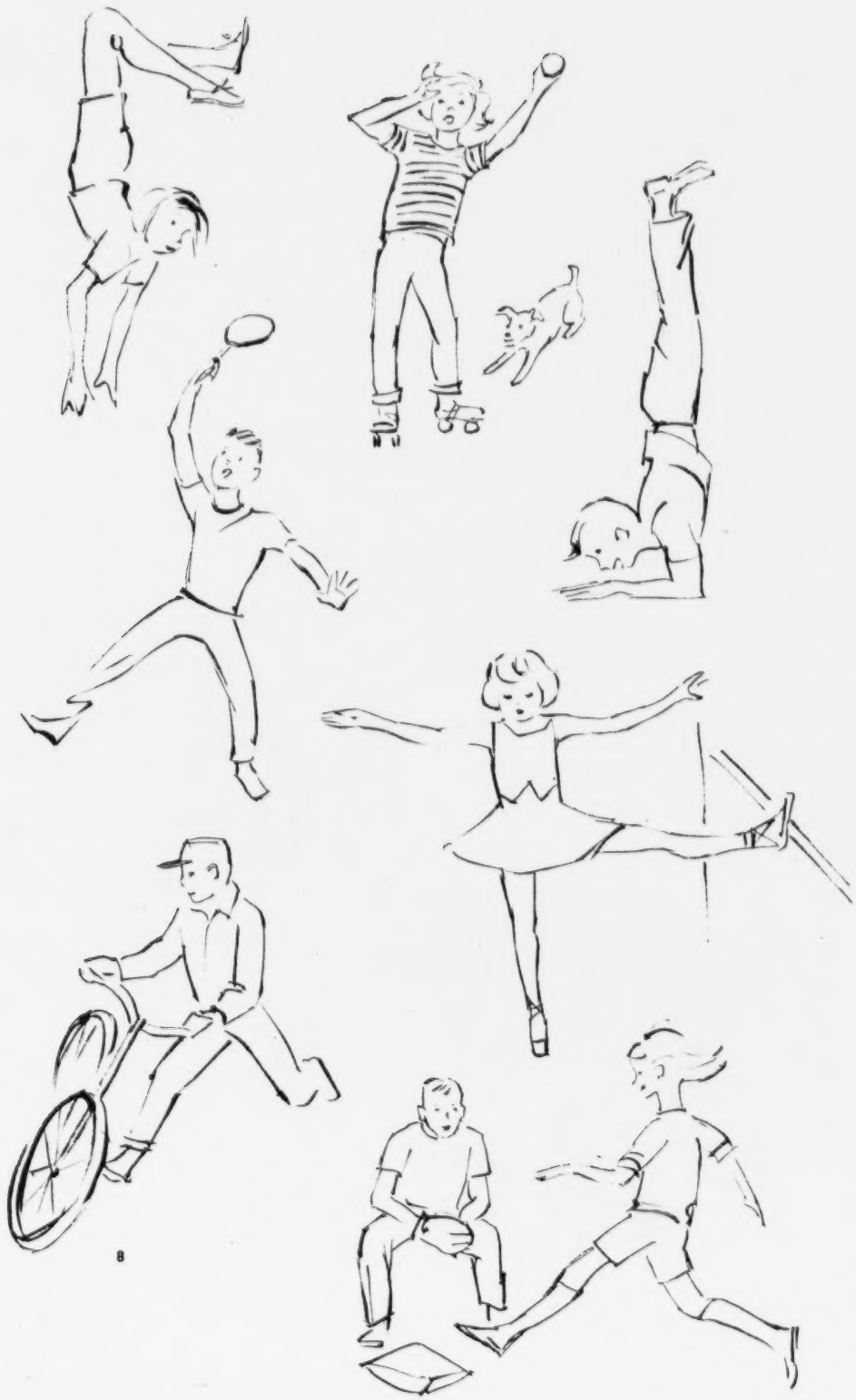
Fifty-five percent of all deaths in the United States are the result of diseases of the heart and the circulatory system. Doctors say

such deaths could be reduced if more people would exercise regularly, eat properly and keep their weight down. A famous heart specialist recently said:

"The best insurance against coronary (heart) disease is exercise—lots of it."

There is no scientific basis for the belief—still held by some—that exercise will damage a healthy heart. After many years of studying the effects of exercise on the heart a medical school professor concluded:

"There's no evidence that athletic competition of any kind will damage the heart of a healthy adult or growing boy, even though the activity is pursued to the point of complete exhaustion."



YOUR PERSONAL PLAN

A complete home program for physical fitness . . . with illustrated exercises, clear instructions and charts . . . everything you need.

How the plan works

The basic workout is designed to condition all of the body's major muscle groups, strengthen the heart and lungs and improve posture. For good results it should be done five times a week.

Your workout includes 10 exercises. One of them—running in place—is repeated four times. Once you start your workout don't stop to rest until you have completed it. Easy exercises are alternated with difficult ones (see chart on page 12) to make this possible. Requiring the heart, the lungs and the muscles to work continuously produces more rapid improvements in strength, endurance and appearance.

If you have difficulty doing all of the exercises continuously, stop and then complete them after a brief rest. If you cannot do some exercises the number of times called for, reduce the number and build up gradually. After a few weeks all of the exercises will be easier for you to do.

Try to work out at the same time every day. Any time is all right, except for immediately after meals. Make exercise as much a part of your daily routine as bathing, brushing your teeth and eating.

On days when you get a good workout at school or in sports you can skip all or part of your exercises. Use your own judgment, but strive for balance. If you have been running or cycling, you might want to do some exercises for your arms and upper body. If you have been lifting heavy objects, it would be better to do some running.

Stick to your plan and it will help to make sports, dancing and everything you do more enjoyable.

A word of reassurance

Don't worry about developing heavy, bulging muscles. You won't. Exercise will slim and smooth the contours of your figure. As the muscles in your abdomen and back become stronger and more elastic, they will provide better support. Every move you make will be easier and more graceful.

In short, you will be well on your way to becoming the poised, attractive and interesting young lady you would like to be. Remember—*there is a muscle behind every curve!*

A note about health

If you are normally healthy, you need have no fear of permanent injury or damage to your heart. However, if you have not had a checkup recently—or if you have a health problem—you should check with your parents and your family doctor before engaging in any strenuous activity.

For girls who like a challenge

You may find that the basic workout does not provide all of the exercise you want. On pages 14 to 19 you will find:

- Special figure-building exercises.
- A chart to help you check your physical fitness.

Supplement your basic workout with these special aids to fitness. They will help to put you in the championship class.

2—Starting position: Stand erect, hands on hips, feet shoulder-width apart. **Action:** Count 1—Bend forward from waist. Count 2—Twist trunk to right. Count 3—Bend trunk backward. Count 4—Twist trunk to left. Repeat specified number of times.

THE BASIC WORKOUT

For good results the exercises should be done five times a week. Try to do all of them without stopping to rest. Perform each exercise correctly to get maximum benefit.

1–5–9–13—Jog in place, raising each foot at least 4″ off floor. Count one repetition each time left foot strikes floor.

1	*Run in Place* . . .	50 slow
2	Twister	5 each way
3	Robot	20
4	Windmill	10
5	*Run in Place* . . .	50 moderate
6	Wing Stretcher . .	15
7	Propeller	10 each way
8	Knee Pushup . . .	10
9	*Run in Place* . . .	25 slow, 50 fast, 25 slow
10	Airlift	10
11	Situp	15
12	Sidewinder	10 each leg
13	*Run in Place* . . .	50 slow

8—Starting position: Lie face down, legs together, hands on floor under shoulders with fingers pointing straight ahead. Knees should be bent at right angle with feet raised off floor. **Action:** Count 1—Push upper body off floor until arms are fully extended and body is in straight line from head to knees. Count 2—Return to starting position. Repeat specified number of times.

10—Starting position: Stand erect, feet together, arms at sides. **Action:** Count 1—Lift arms sideward and upward while rising on toes and taking a slow, deep breath. Count 2—Exhale slowly while returning to starting position. Repeat specified number of times.

3–Starting position: Stand erect, hands on hips, feet shoulder-width apart. **Action:** Count 1—Bend trunk to right, reaching hand as far down right leg as possible. Count 2—Return to starting position. Counts 3 and 4—Same action to left side. Repeat specified number of times.

4—Starting position: Stand erect, feet spread apart, hands extended sideward at shoulder level, palms down. **Action:** Count 1—Bend and twist trunk, touching right hand to left toe. Count 2—Return to starting position. Counts 3 and 4—Same action to other side. Repeat specified number of times.

6—Starting position: Stand erect with elbows at shoulder height, hands clenched in front of chest. **Action:** Count 1—Thrust elbows back vigorously without arching back. Keep head up, elbows at shoulder height. Count 2—Return to starting position. Repeat specified number of times.

7—Starting position: Stand erect, arms at sides, feet parallel and 1′ apart. **Action:** Swing arms sideward and upward in full arcs, crossing them at height of swing and continuing around to starting position. Count one repetition for each complete revolution. Do specified number of repetitions in one direction, then reverse action.

11—Starting position: Lie on back, legs straight and together, arms extended beyond head. **Action:** Count 1—Bring arms forward over head, rolling up to sitting position and sliding hands along legs to grasp ankles. Count 2—Roll back to starting position. Repeat specified number of times.

12—Starting position: Lie on right side, head resting on right arm. **Action:** Count 1—Lift leg as high as possible. Count 2—Lower leg to starting position. Do required number of repetitions, then reverse position and repeat exercise on other side.

FIGURE-BUILDERS

Tall or short, big or little, you can improve your figure. Proper exercise can help you take pounds off—or put them on where you need them. The following exercises are especially designed to smooth out your figure trouble spots:

FOR THE BUSTLINE

1. The Press

Starting position: Stand or sit erect. Clasp hands, palms together, close to chest. **Action:** Press hands together hard and hold for 6–8 seconds. Repeat three times, resting briefly and breathing deeply between repetitions.

2. Pullover

Starting position: Lie on back with arms extended beyond head. Hold books or other objects of equal weight in hands. **Action:** Count 1—Lift books overhead and down to thighs, keeping arms straight. Count 2—Return slowly to starting position. Repeat 3–6 times.

3. Semaphore

Starting position: Lie on back with arms extended sideward at shoulder level. Hold books or other objects of equal weight in hands. **Action:** Count 1—Lift books to position over body, keeping arms straight. Count 2—Lower slowly to starting position. Repeat 3–6 times.

FOR THE WAIST

1. Knee Lifts

Starting position: Lie on back with knees slightly bent, feet on floor and arms at sides. **Action:** Count 1—Bring one knee as close as possible to chest, keeping hands on floor. Count 2—Extend leg straight up. Count 3—Bend knee and return to chest. Count 4—Return to starting position. Repeat 5–10 times, alternating legs during exercise.

The double knee lift is done in the same manner, raising both legs at the same time. Do 5–10 repetitions.

2. Crossover

Starting position: Lie on back, arms extended sideward, palms down. **Action:** Count 1—Raise right leg to vertical position and move slowly to left until almost touching floor. Keep arms, head and shoulders on floor. Count 2—Return to starting position. Counts 3 and 4—Same action to other side. Do 5–10 repetitions.

FOR HIPS AND THIGHS

1. Cheerleader

Starting position: Kneel on floor, back straight, hands on hips. **Action:** Count 1—Bend backward as far as possible, keeping knees on floor and body straight. Count 2—Return to starting position. Repeat 10–15 times.

2. Bicycle

Starting position: Lie on back with hips and legs supported by hands. **Action:** Simulate bicycle pumping action with legs. Pump 50–100 times.

3. Ballet Stretch

Starting position: Stand erect with left hand resting on back of chair for support. **Action:** Count 1—Raise right leg sideward as high as possible. Count 2—Return to starting position. Count 3—Swing right leg forward as high as possible. Count 4—Return to starting position. Count 5—Swing right leg back as high as possible. Count 6—Return to starting position. Do 5–10 repetitions, then repeat exercise with left leg.

4. Two-Way Stretch

Starting position: Kneel with hands on floor, back straight. **Action:** Count 1—Arch back, bend head down and bring left knee as close as possible to chin. Count 2—Lift head high and extend left leg as far backward and up as possible. Repeat 6–10 times with each leg.

FOR CALVES AND ANKLES

1. Rocker

Starting position: Stand erect, feet together, hands on hips. **Action:** Count 1—Rock back on heels, keeping legs straight and raising toes off floor. Count 2—Rock forward on toes, lifting heels off floor. Repeat 10–20 times.

2. Hop

Starting position: Stand erect, feet close together, hands on hips. **Action:** Hop lightly on both feet 50 times, on the right foot 25 times, on the left foot 25 times, on both feet 50 times.

3. Stemwinder

Starting position: Stand erect, left foot lifted clear of floor. **Action:** Rotate left foot in small circles 20 times. Repeat with right foot.

FOR GIRLS WHO LIKE A CHALLENGE: *Goals to Shoot For*

The important thing in your physical fitness program is to make steady progress. Set goals for yourself. Determine what you should weigh and try to reach that figure. Get to the point where you can do all of the exercises in the basic workout easily, without tiring. Stick to your schedule of five workouts a week.

As you progress you may wonder how you compare with other girls your age. The figures in the chart below were taken from tests involving thousands of girls. They represent the top level in physical fitness. Try to match them.

AGE	12	13	14	15	16	17	18
Bent Arm Hang	48 secs.	50 secs.	50 secs.	55 secs.	55 secs.	55 secs.	55 secs.
Situps	50	50	50	50	50	50	50
Standing Broad Jump	5'8"	5'9"	6'0"	6'2"	6'5"	6'6"	6'7"
600-Yard Run-Walk	2:22	2:24	2:20	2:23	2:23	2:30	2:30
Endurance Swim	250 yards	440 yards		880 yards			

BENT ARM HANG

Starting position: Grasp bar with hands shoulder-width apart, palms toward face. Stand on a chair or have helper lift you to position where the chin is slightly higher than the bar. **Action:** Without aid of chair or helper, hang in position as long as possible. The test ends when your chin drops below the level of the bar.

STANDING BROAD JUMP

Starting position: Stand with feet comfortably apart, toes just behind takeoff line. **Action:** Bend knees, swing arms backward and then forward and upward while springing from balls of feet.

Take three jumps. Measure from takeoff line to heelprint or to point nearest takeoff line where your body first touches surface. Record best jump to the nearest inch.

600-YARD RUN-WALK

Starting position: Stand behind starting line on running track or other measured area. **Action:** Run on starting signal and maintain best speed possible for 600 yards (walk only if necessary). Record time in minutes and seconds.

ENDURANCE SWIM

Starting position: Diving position. **Action.** Dive on starting signal and swim the prescribed distance using any stroke or combination of strokes. **Note:** Swim only in a pool in the presence of at least one skilled swimmer.

SOME ADDED TIPS ON PHYSICAL FITNESS

Earlier it was mentioned that exercise is only one of several things necessary for physical fitness. The following guide lists other ways of developing and maintaining top physical condition:

Medical care—You should have at least one complete physical examination during your junior high school years and another in senior high. This is in addition to visits to the doctor's office for treatment, shots and vaccinations or eyesight and hearing checkups.

Dental care—Every girl your age should visit the dentist every six months. Now is the time when you are most likely to have cavities. It also is the time when you should get braces for your teeth, if you need them. Learn to brush your teeth properly and brush them often—at least two or three times a day, and especially before going to bed at night. Keep an extra toothbrush in your locker at school and use it after lunch. Don't feel self-conscious. Be a leader and make it the thing to do.

Note: If you cannot afford proper medical and dental care, ask your school nurse or principal about the possibilities of obtaining such care. Have your parents contact the local health department or medical and dental societies. They will be glad to assist you.

Eating—Food is your only source of energy for body motion and heat. It also is used to replace wornout or injured tissues and to build new tissues during growth. How much food you need is determined by your age, size and activity. Your needs are greatest during your fastest-growing years—usually from about 12 through 15 years of age.

Just as important as the amount of food you eat is the kind of food you eat. A good rule to follow is to eat four servings a day from each of the basic food groups:

- Breads and cereals.
- Meat, poultry, fish and eggs.
- Fruits and vegetables.
- Dairy products.

Snacks are not harmful, so long as they consist of nourishing food. However, your body needs only so much food. That which it does not use is stored as fat. If you consume 2,600 calories a day and use only 2,500, you may gain 10 pounds more than you should in a year.

Sleep—You should get nine or 10 hours of sleep a night during your fast-growing years. If you are nearing maturity, you should get at least eight. Try to get to bed at approximately the same time every night, especially on school nights. Sleeping late in the morning is a poor substitute for regular rest.

Posture—Good posture and physical fitness are closely related. Each helps develop the other.

When you stand or sit erectly the internal organs have plenty of room, the blood circulates freely and the muscles can relax. Physical conditioning helps you to have good posture by strengthening and firming the muscles which support the body.

Common causes of poor posture are excess weight and flabby muscles, particularly in the abdominal region. Weak abdominal muscles let the pelvis tilt forward, increasing the curve of the lower back. This causes the abdomen to stick out. A person who has this problem usually tries to correct it by leaning backward and bending her knees slightly. This produces what is called "old man's stance."

Excessive use of high-heeled shoes can produce the same effect—even in young girls. Also, the muscles in the calves and the backs of the legs are shortened, so that it may be uncomfortable to wear low heels or go barefoot.

The correct posture positions are:

- **Standing**—Feet parallel, about six inches apart. Head high, chest out, lower back slightly curved and abdomen as flat as possible. Knees slightly flexed—not locked. Weight evenly distributed on balls of feet.

- **Sitting**—Sit tall and straight, with hips touching back of chair, feet on floor. Keep chest out and neck in line with upper back. When writing lean forward from hips.

- **Walking**—Knees and ankles limber, toes pointing straight ahead, head and chest high. Swing legs forward from hip joints, lift feet off the ground. The heels should touch the ground first.

Personal habits—Cleanliness and good grooming are important to physical fitness. They affect the way you look and the way you feel. Always bathe after exercising strenuously. Washing your face three or four times daily with warm water and soap can reduce complexion problems.

The things you *don't* do can be just as important as the things you *do* do. Smoking is one of the things no young person should do. It reduces endurance and breathing capacity, and research indicates it is a factor in some forms of cancer and heart disease. You may hear someone say that not smoking is one of the "sacrifices" you have to make for physical fitness and good health. This is nonsense. The people who make "sacrifices" are those who start smoking.

A PHYSICAL FITNESS GLOSSARY

Some of the technical terms used in this booklet may be unfamiliar to you. With physical fitness becoming an increasingly popular subject, here are some words you will want to know:

Calorie—The unit used to measure the amount of energy in food. (An 8-ounce glass of whole milk contains 170 calories, an average slice of bread 60.)

Cardio-respiratory endurance—The ability of the heart and lungs to continue effective performance.

Circulatory system—The heart, arteries and veins.

Muscular endurance—The ability of a muscle to continue exerting force.

Muscular strength—The maximum force that can be voluntarily applied in a single muscular contraction.

Stamina—A combination of cardio-respiratory endurance and muscular endurance.

HELP MAKE FITNESS FASHIONABLE

Some of your friends may laugh at the idea of doing exercises. Don't let that stop you. They either don't understand the body's need for physical activity, or they just aren't willing to work at keeping themselves physically fit. Secretly all of them would like to have the qualities which exercise can help you develop.

Many famous people—government leaders, astronauts, doctors, actresses, fashion leaders and others—exercise daily. They know it helps to keep them young, active and alert.

You can help make fitness fashionable among your friends. Show them this booklet and encourage them to get copies for themselves. Form cycling, swimming, hiking, skating or fitness clubs. Exercising in groups can add fun and zest to your workouts.

Whatever you do, don't get discouraged. The exercises may seem difficult at first, and your progress may seem slow. Stick to your schedule. Gradually during the coming weeks and months you will discover a new ease in doing the exercises and a new spring in your step. You will look better and feel better, and you will finish each day with more energy for social activities and recreation.

It is easy to get by without much physical activity today. Don't do it. You will be missing a wonderful opportunity to improve your appearance and to lead a happier and more useful life.

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. . . A CHALLENGE TO YOUTH

(The following message was prepared especially for this book in November, 1963.)

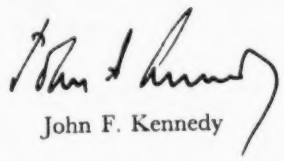
If each of you could select your time and place in history, I am sure most of you would choose America today. The western frontier has long since vanished beneath the wheels of advancing civilization, but on every side new frontiers of science, thought, exploration and social progress beckon the rising generation. It is a prospect bright with the promise of new challenge, adventure and freedom.

Like all promises, however, this one demands a price. America's bright future will become a reality only if each of you is willing to work for those qualities of strength, stamina and energy which are the keys to human progress.

Experience and medical science teach us that physical fitness improves our performance in every area of life. For this reason I have, on many occasions, stressed the need for physical fitness programs in all our schools. This remains an important goal, but still more must be done. Each of you must accept—now and for the rest of your lives—responsibility for your own fitness in the great national effort to build a stronger and more vigorous America.

This booklet contains a plan, developed by my Council, which can help every girl to improve her physical fitness. I urge you to follow this plan—to get sufficient food and rest, to take proper care of your health and to exercise regularly and vigorously.

The young people of America always have welcomed challenge, and I am sure you will welcome this one. It is a challenge which holds the promise of better, happier and more useful lives for those of you who meet it.



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